

**PHYSICAL
EDUCATION**
*for Girls
and Women*

SECOND EDITION

PHYSICAL EDUCATION *for Girls and Women*

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Preface

Physical Education for Girls and Women has been extensively revised, and the sections on Archery, Basketball, Swimming, Tennis, Volleyball, and the Quizzes have been entirely rewritten. A new chapter on Riding has been added.

This book was written to help make Physical Education more meaningful to students while in school and to stimulate in them a desire to continue participating in sports and activities throughout their lives. The book was developed as a workbook and as a source of recreational information. It is also recommended as a guide for the new teacher and may serve to supplement lesson plans with background material and quizzes. This is not a complete text, but bibliographies accompany each section and offer the reader abundant reference material.

Physical Education for Girls and Women is a book which from its beginning has been the product of the effective collaboration and experimentation by the authors, who have, whenever necessary, sought the advice and criticism of students and experts. Sincere appreciation is extended to the former members of our staff: Deborah Benjamin Pegel, Florence Corkum Whipple, Claire Doran Stancik, Cornelia Edmondson, Janet Hazelwood Stevens, Norma Wright Miller, Patricia Baldwin Kilpatrick, Kathleen Perkins, M.D., Mary Lou Stewart, Margaret Michels Meehan, and Anne Mayrose. The authors would also like to thank especially:

The Home Economics Faculty of Western Reserve University for its cooperation and advice in preparing the section on Nutrition.

Anne Falther Laganke, Director of the Family Health Association of Cleveland, for her chapter on *Healthful Living*.

Billie Feddery Smith of the Red Raider Camps, Shaker Heights, Ohio, and Ann Stueber, National *Judge of Riding*, Madison Square Garden Horse Show, for the chapter on *Riding*.

Kathryn Karipides for her contribution to the *Dance* chapter.

Margaret Michels Meehan for her contribution to the *Fencing and Golf* chapters.

Mary Sears, department secretary, who aided in the preparation of the manuscript, and Mary Lou Pasmont, who illustrated the *Camping* chapter.

We welcome a new author to this edition, Marion Russell, whose excellent qualifications and experience in education made her a valuable asset to the new edition. To Mary Lou Paul Squance appreciation is given for her thoughtful contributions throughout the book. Helen W. Smith, who shared the responsibility not only of the first edition, but who has undertaken this new edition with intelligence and competence, has our deep appreciation.

EMILY R. ANDREWS

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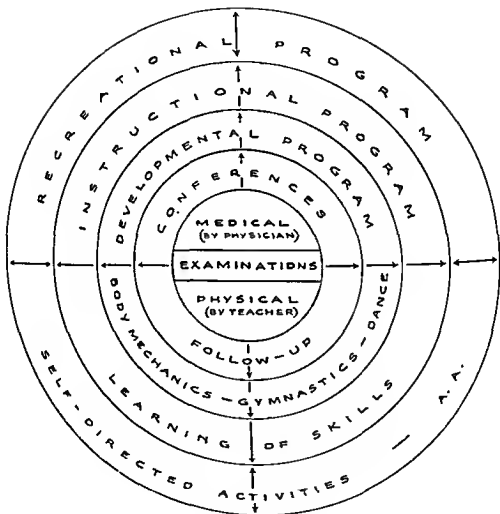


Fig. 1. Schematic Outline.

Major Aims of This Book

CHAPTER ONE

Education is directed at the personality of the student as a whole. Physical education—which strives to enhance physical growth, development, and movement—is an integral part of the total educational process, and is closely allied with academic progress. Too often students fail to maintain high standards because of physical or emotional weakness. A well-rounded program in physical education helps to overcome such handicaps and to increase physical and mental well-being—not only during school years, but during adult life as well.

In no teacher-student situation can the teacher accomplish the primary objectives of education by herself. A teacher is present only as a specialist to guide and lead, not to dominate. The student must make her own effort to participate and appreciate, thus sharing the responsibility for the molding of a well-educated person.

To help the student undertake her part in physical education, we list the major aims of this book below. It is hoped they will also bring to girls and women a clearer understanding of those qualities that help to make a well-educated woman.

1. We shall stress the importance of healthful living and its contribution to the student's physical, mental, social, and spiritual growth.
2. We shall try to broaden her knowledge in the general field of physical activity.
3. We shall try to develop her appreciation of fine body movement and coordination as she performs.

4. We shall try to show her what comprises good form in many activities and help her to acquire critical judgment and appreciation of the performances of others.
5. We shall provide a section on body mechanics so that she may:
 - (a) Assemble information on the values of good mechanics, efficient carriage, relaxation, menstrual hygiene, foot conditions, weight control, nutrition, and the relation of these to good health.
 - (b) Keep a work sheet and record of the exercises designed for her personal improvement.
6. We shall provide a section on the value of gymnastics and its place in the physical education program as basic to other activities.
7. We shall provide a section on dance for the purpose of:
 - (a) Explaining the value of rhythmic training and expression.
 - (b) Presenting a picture of the elements contributing to the dance.
 - (c) Acquainting her with traditional dance steps, and the history, background, and techniques of English country, American country, European folk, and social dance.
- (d) Introducing her to the history, background, and technique of modern dance.
8. We shall provide sections on sports for the purpose of:
 - (a) Developing knowledge, understanding, and appreciation of a variety of sports even though she may not participate in all of them; to be an intelligent spectator rather than an "armchair athlete."
 - (b) To use this knowledge in improving skills previously acquired and in learning a variety of new skills, which in turn promotes a desire for further activity.
9. We shall endeavor to create the awareness that physical education is not just for the present, but is an important preparation for an active and efficient life.

Healthful Living

An educated person should know:

1. That good health includes physical, mental, social, and spiritual growth.
2. That to achieve maximum health, she must have knowledge and understanding of the close correlation of these four major units that make up a 100 per cent person.

The four columns below include the over-all knowledge you should have if you want to claim that you are an educated person. However, knowledge is not enough; it is how we use this knowledge that really determines how well we are educated. Each column contains the material that most closely relates to one area of growth, but since each aspect of health is related to every other aspect it will be necessary to read across the columns to see the interrelation of the four areas of growth.

Example: An educated person should know the principles of inheritance and at the same time recognize her innate capacity and be willing to accept it. The social environment into which she is born has tremendous influence on her ability to develop her innate capacity and on her entire social growth. From this social environment she draws her basic belief and faith.

THE INDIVIDUAL

Physical Maturity	Mental Maturity	Social Maturity	Spiritual Maturity
Knows the principles of inheritance or heredity—what we start with.	Recognition of our innate capacity at birth and an acceptance of this capacity.	Recognizes that we are born into an environment that has a tremendous influence on our social growth.	Recognizes that we are born into an environment with basic beliefs and faiths.
Realizes that our inheritance is settled at time of conception.		Recognizes environmental factors both natural and man made.	Recognizes the spiritual beliefs of others and respects the importance of each individual's belief to himself.
Learns to live with the physical qualities with which we are born and make the best use of them.	Recognizes that most people do not develop their innate capacity to fullest and determines to make the fullest use of all her abilities.	Has tolerance for those factors she cannot change; has respect for those factors she wants to keep; works toward improvement of those environmental factors she can and wants to change.	Recognizes a power outside of one's self. Most people call this power—God.
Understands the principles of genetics and eugenics	Knows that personality is a product of the hereditary line plus every factor of the environment.	Has an understanding of actions and customs of the group.	
Understands the structure and function of the human body including the reproductive system	Knows that good physical health helps one develop better mental health.	Knows that our physical and emotional health influences our relationship with others.	Knows that our spiritual attitudes modify our social and mental maturity.
Knows that the physically fit person is able to withstand physical stress and fatigue for longer periods of time.	Recognizes that good mental attitudes and ability are related to physical fitness.		Develops fuller appreciation of the design and function of the human body.
Applies good movement skills in sports and everyday activities.	Realizes that efficient movement helps her to look and feel better, creating a better mental attitude.	Appreciates that poise and efficient movement help to achieve presence in meeting and working with others.	
Knows the predisposing factors to health and disease.	Realizes the importance of developing wholesome attitudes toward the body and body functions—including attitudes toward sex.	Understands the meaning of wholesome relationships with members of her own sex and the opposite sex.	

THE INDIVIDUAL (Continued)

Physical Maturity	Mental Maturity	Social Maturity	Spiritual Maturity
Realizes the emotions influence body activities.	Has an understanding of our inner human needs.	Realizes the value of improving these relationships by developing social skills, active participation in sports, group activities.	Understands that faith is necessary for the mature person to meet many daily experiences and responsibilities.
Understands the sensory organs — their structure, function, and vocational values and importance of caring for these organs.	Knows how the emotions are aroused. Is aware of the close relationship of the physical and mental health of the individual.	Realizes that success in life depends on how well one gets along with others. Has an understanding of the customs and rules of human relationship and respect for them.	
Recognizes the biological forces, i.e., hunger, thirst, need for air, need for activity, and sex, are present at birth. These forces are concerned with the individual or self.	<div data-bbox="279 619 486 740"> </div> <p>Where these two meet shows the emotional level of maturity.</p>	Recognizes also that in society there is a social force which is concerned with the group.	
Is aware of her own body's capacity and is willing to develop or limit this capacity.	Knows that emotional and intellectual maturity can be measured by the ability to adjust to new situations at times of stress and strain with the least harm to self or the group.	Knows health needs of own and other social groups and understands what can be done about them.	Develops a faith in one's self which helps one to carry on in spite of setbacks.
Knows that one is responsible for her own health.	Knows that the way one lives is important to personal health and in meeting the mental and emotional crises in daily life. Is able to take responsibilities. Cultivates a love for beauty.	Knows that health is important in achieving life goals. Knows that responsibility for health is shared by social group.	
Practices balanced living at all times	Practices balanced thinking.	Understands how balanced physical and emotional health helps in our enjoyment of others.	A spiritual person has a love for beauty. Learns to accept some things which cannot be explained.

THE INDIVIDUAL AS A PART OF THE FAMILY (Continued)

Physical Maturity	Mental Maturity	Social Maturity	Spiritual Maturity
Knows how to care for illness in own home.	Recognizes the emotional factors within the home and works toward better understanding of each member of the family.	Talks over problems with group — gains strength through group sharing. ↓ Recognizes the rights of each member of family.	
Knows principles of home care of all age groups.			
Knows the principles of illness and accident prevention.	Faces problems objectively.		
Knows the importance of prenatal care.	Knows that personality of child starts with attitudes of mother during pregnancy.		
Knows principles of child care and growth and development.			
Understands the "developmental tasks" of adolescence.	Recognizes the needs of every young person to develop herself—her need for finding a place for herself in the scheme of things.	Knows that maturing children need social guidance—plans social affairs around developmental readiness.	Knows that we help young people find themselves when we provide a fertile religious soil for their development.
Knows that preparation for marriage includes good physical health, an understanding of marriage relationships and responsibilities.	Knows that adults, too, must continue to mature.	Knows that youth needs worthy adults to imitate, complete with values and standards that make sense.	
	Knows that the emotional health of the individual is one of the main factors in determining the outcome of a marriage.	Knows that only as our children are encouraged to grow up and find themselves with parents who are grown up enough to let their children mature can we expect a healthy younger generation.	

The strength of the community depends upon the strength of its members, and each individual needs to share in community

life. The suggestions below should be applied in your community life. *Read across as well as down.*

THE INDIVIDUAL AS A PART OF THE COMMUNITY

Physical Maturity	Mental Maturity	Social Maturity	Spiritual Maturity
Recognizes her responsibility as a citizen to the community health.	Realizes the value of a good environment and works toward making her community better.	Knows health laws—works to change them if they can be improved.	Knows that community morals are dependent on individuals—that one must work toward the kind of community in which we can have faith.
Knows that health and employment go hand in hand.		Recognizes the economic burden of unnecessary illness and learns how to reduce this burden.	
Is acquainted with the community facilities and organizations.	Knows that to develop emotionally mature people the community must provide opportunities for leadership.		
Knows health progress.	Assumes responsibility for maintaining health progress and is willing to help with further advances.	Takes an active part in making the community safe from hazards.	

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Body Mechanics

Body Mechanics includes the performance of standing, walking, sitting, and all other daily movements with poise, efficiency, power, and good looks. The term is more inclusive than "posture," more nearly like "poise" or "carriage" or "fine appearance." The course in body mechanics attempts to meet the needs of each individual as determined by posture, motor, and medical examinations. It is also intended to help the student establish a criterion and appreciation of normal body movement.

Good carriage, important in body mechanics, is the alignment of the segments of the body in balance without strain. A vertical line erected from the foot should pass through the ankle, the knee, the hip joint, shoulder, and ear. This correct lining-up is also known as weight-distribution. The neck (cervical), upper back (dorsal), and lower back (lumbar) curves are normal when only slightly curved. The depth through the chest should be greater than through the abdomen—carrying the ribs of the lower chest well spread and beyond the abdomen accomplishes this. For freedom of movement, flexibility of the hip and shoulder joints is important; for strength and endurance, strong abdominal and back muscles are necessary.

The reasons for good carriage or segmental alignment are many and include organic, aesthetic, social, mental, and economical values. This balanced distribution of segments should be stressed in all activities as well as in standing. Note below the various everyday movements and their descriptions.

Sitting. The act of sitting involves bending the knees to lower the hips to the chair, thus avoiding an ungainly bending forward of the trunk. One

foot is placed back and under the chair for balance, the arms are at the side without strain, the trunk is almost erect. While seated, the hips remain well back in the chair, the trunk is erect, and the abdomen is firmly retracted with the ribs still well spread. The feet and knees may be together, crossed with soles of feet on the floor, leaning to one side, or placed one ahead of the other.

Rising. Reversing the above procedure, one foot is placed forward, the other backward under the chair, the trunk leans forward slightly, and the legs extend to stand. Arms are not used to push nor do the hips protrude in back.

Stooping. Involving the same leverage as in sitting and rising, stooping is done through bending the knee and tucking in the hips, while one foot remains behind for balance. In this manner, the thigh muscles do the work and not the lower back muscles, which may become strained when one bends forward from the hips to lift objects.

Lifting. Stooping close to object, the trunk leans slightly forward and sideways in order to get one or both hands on object beside the body. The body rises then with weight held close to it. For greater balance, separate feet from each other, with one in front of the other, so that the base of support covers a greater area. Lifting may also be done efficiently by squatting with feet close to the weight, and the knees separated to straddle it. Upon rising, balance is maintained by holding the object close to the body.

Ascending Stairs. This is one of the best exercises if done correctly. Two methods of foot placement on steps are used. In the better method, the whole foot is set down, and the knee is extended to rise; in the faster method, only the ball of the foot is set down, and the ankle is extended by the calf muscle to rise. Research studies show that the first method takes 25 per cent

less energy than the other. Remember this on those second or third floor climbs.

Upon ascending, the body inclines slightly forward from the ankle and the lift is accomplished by the thigh. To descend, the carriage is erect, the knee of the supporting leg bends straight forward to lower the other foot to the step. Avoid knocking the knees and rolling the arches inward.

Reaching. This is another good exercise. One foot steps ahead of the other, and as one stretches, the abdomen is kept firm and shoulders relaxed. For greater height, rise to the ball of the foot and reach with the arm opposite the forward foot. Keep the shoulders low. To reach over a bed or dining table, bend the forward knee slightly and raise the other leg backward in the air to balance forward lean of body.

Pushing. Bracing one leg well back with both knees slightly bent, the body leans forward, hips tucked under and back straight. The hands push object close to its center of gravity. Force is obtained by the slow extension of the joints rather than leaning the body weight.

Pulling. The action is reversed in pulling. The hands grasp object at its center of gravity, the body leans backward, and the body weight is used as well as the extension of legs and hips to get force.

The standards of skill in a performance are based on economy of effort and effectiveness of results. Mere practice of a skill will not necessarily improve one's muscular efficiency or the quality of results. Good movement skills result when one desires them enough, one understands the principles of motion, and one applies them. Therefore, a number of principles or generalizations of movement are recommended as follows:

1. *Economy of Movement and Relaxation:* The economical movement is one which uses the minimum of muscular power in relation to the work produced. This

means the contraction of only those muscles necessary to the action and their contraction, with the right amount of force, at the proper time and in proper sequence. Movement tends to be graceful and efficient when muscles work successively or in summation rather than explosively.

2. *Gravity*: The strong force pulling all objects and bodies vertically downward is known as gravity. This force is concentrated on the center of weight or "center of gravity," and the line of pull from the center of gravity downward is the "line of gravity." The center of gravity of the human body is just above the hip joint.

3. *Balance*: A body, or part of the body, is balanced or stable when its center of gravity is over its supporting base. All parts are pulled downward toward the base of support, and are most stable when the center of gravity of each is located directly over the center of the base of support. The head, neck, shoulders, trunk, hips, and legs each has its own center of gravity. The muscles and ligaments of each continually attempt to resist the pull of gravity. The greatest resistance occurs in the erect body where the pull of gravity holds each part firmly to its base. It is therefore wasteful when any part of the body is allowed to move forward, sideways, or backward so that its center of gravity falls outside the base of support. Another segment or part must be moved out of line in the opposite direction to maintain total balance. This kind of body structure is particularly unstable, and is easily upset by slight movement of any one part.

4. *Inertia*: The body will remain stationary unless force is applied to set it in motion. If force is applied at or near the center of gravity, movement will be in direction of that force; if below, above, or at the side of the center of gravity, the body will move in direction of that force but with rotation around its center of gravity. Efficiency of movement results from the correct direction of the application of force

and from the correct amount of force. One incorrect movement or force in even a small part of the body affects the performance of all other parts. Turning the toes outward in walking causes the rest of the body to rotate in that direction; swinging one arm across the body leads the body into following. Because the center of gravity is approximately at the level of the hips, movements of the legs and trunk should start at this point—not from the back or waist. If the body is lowered, the hips go down with the body; moving forward or backward as in pushing or pulling, the hips initiate the movement. Little effort will be wasted in rotation if the force is applied at the center of gravity.

5. *Muscle Strength*: A muscle group is as strong as its weakest muscle. The power of any one muscle depends very much in actual practice upon how good is the help it can get from its fellows.

The strongest muscles, usually those of the legs and thighs, should be employed for an act. In stooping, the thigh muscles should lower the body; in lifting, the thighs again do the work. In walking and running, the movement should be initiated in the hip joint and thigh rather than in the lower back.

When adding external weight to the body, the center of gravity moves toward the added weight. The weight should be held close to the body and as nearly over the base of support as possible, the body making the adjustment from the ankles upward rather than only at the waist.

6. *Muscle Sense, or Kinesthesia*: The perception or awareness of movement through muscle sensation is known as kinesthesia. As one applies the mechanical principles in a variety of activities, one consciously trains the muscles in right pathways establishing efficient habits of movement. There can be no muscular sense of a movement or feeling of a movement pattern that has never been made. The more kinesthesia is developed, the more it becomes habit

also. This is a great aid in the development of relaxation, for the individual learns to recognize the difference between tension and relaxation of muscles. This perception should be developed to such a degree that the body is uncomfortable unless it performs each activity with a minimum of effort still producing maximum results.

7. *Leverage*: Each part of the body or the whole body may act as a lever, the bones and muscles being the working parts. The longer the lever, the greater is the range of movement—resulting in a greater time in which to impart force.

8. *Transfer of Weight*: Shifting the body or mass from one foot to the other is an integral part of most movements and is known as "transfer of weight." This enables the body to move with additional force and in a long flat arc. Many of the extensors of the body are brought into play and, being the strongest muscles, give added force to the action. The transfer continues to the end of the follow-through, allowing for smoother movement.

9. *Rotation or Torque*: The rotation of the body on its vertical axis meets with the minimum of resistance in overcoming inertia and adds to the momentum of the trunk. Torque is one of the most effective muscular mechanisms—the momentum gained in the trunk is transferred to that of the shoulders, arms, and legs, and gives greater force in throwing, batting, driving, and kicking. Rotation of the arms and legs is also used to increase speed and momentum.

10. *Muscle Stretch*: A muscle can exert its greatest force when it is fully extended; as it shortens, the force diminishes. This is one reason for getting the arm well back for throwing, batting, driving, and so on.

11. *Extension of the Joint*: Joints should be flexed in preliminary movement and strongly extended to add more force to the action of throwing, jumping, or striking. Additional force may be gained by cocking the joint in the preparatory action of

throwing, striking, or kicking and sharply snapping it at the moment of release or impact.

12. *Margin of Safety*: Every joint should be employed in movement, not to the extreme range of movement, but freely enough to "give" or to allow for a little additional movement, thus preventing loss of balance or strain and injury to the joint. Flexibility in the shoulders, spine, hips, and legs is important to allow for a free range of ability. The continued strain from lack of a safety margin results in the stretching of the ligaments, creating less power to absorb shocks.

13. *Flattening the Arc*: In the act of throwing, kicking, or striking, the arc of the moving lever should be as flat as possible. This aids in gaining greater accuracy of aim and better follow-through of direction.

14. *Opposition*: For every vigorous movement of a part of the body forward, backward, or sideways there should be a counteraction of this by movement of another part. Opposition tends to balance the action and to prevent too much rotation of the long levers of the body. The left arm swings forward with each step of the right foot in walking and running; with each lift of the right leg in jumping and hurdling; and so forth. It is essential that the opposing motion be in the same rhythm.

15. *Resistance or Reaction*: Every force which meets resistance has an equal and opposite counterforce. Locomotion is accomplished by pushing against a resisting surface or by some external force acting on the body. In throwing or striking, the rear foot should brace itself to meet resistance with the ground and therefore make the force of action stronger. On the other hand, receiving objects coming with speed, or stopping one's own body momentum on a firm surface, necessitates nonresistance or less reaction by relaxing and flexing the joints or "giving."

Everyday Activities

Good body mechanics can help the individual perform everyday activities with a minimum amount of effort and fatigue. These activities include walking and standing, sitting in chairs, sitting on the floor, bending over work, lifting and carrying, and pushing and pulling heavy loads.

BASIC PRINCIPLES THAT SHOULD BE APPLIED TO DAILY ACTIVITIES

Sit whenever possible when performing household duties, such as ironing, folding clothes, and preparing food. Bend the knees, keep the back straight, and lean forward from the hips when it is necessary to pick up objects from the floor. When it is necessary to stand for any length of time, such as when waiting in a cafeteria line, standing in a bus, ironing, or working at the kitchen sink, shift the weight occasionally. Place one foot ahead of the other and shift weight to the forward foot to relieve the tendency to lock knees and to protrude buttocks. Use tables, chairs, and work spaces which are at the correct and comfortable height for you.

Use the leg muscles whenever it is possible rather than the weaker back muscles.

Push or pull a load since either is usually easier than carrying.

Take a few minutes to relax fatigued parts of the body or relax completely for a few minutes and then continue if a task is long and difficult.

SPECIFIC ACTIVITIES WHICH INVOLVE THE ABOVE PRINCIPLES

1. *Sitting on the floor.* Assuming a graceful sitting position on the floor involves control and poise. This is one suggested method:

Cross one foot behind the other, as in a curtsy. Bend both knees, keeping back as erect as possible. Lower the body until the knee of the rear leg touches the floor. Then sit back of and close to the rear foot. Swing the forward leg to the floor beside the other leg.

Mentally check this position; is it easy? Are the knees covered? Are the hands comfortable?

2. *Rising from the floor.* Roll forward to both knees, keeping body erect. Place one foot forward on the floor, straighten the knees by pushing with the rear leg and transfer the weight to the forward foot.

Rising from the floor is more graceful if the body does not bend forward, and if the hands are not used as "pushers."

3. *Work which involves bending.* Keep the back straight while working; bend from the hips. Where possible use long handled utensils to minimize the strain of bending over work; or, if these are not available, use very short handled implements in a kneeling position, keeping back straight, not arched.

If possible have working surfaces at a comfortable height for you; place blocks of wood under tables and ironing boards if the surfaces are too low.

Sit as near as possible to the work; keep elbows close to waist level. Reach forward from the hips, keeping the back erect.

4. *Work which involves lifting.* Be sure you can lift the load; if it is too heavy divide it or get someone to help you lift it.

Stand close to the load that is to be lifted, with one foot in advance of the other.

Keep the trunk erect. Bend at the hips, knees, and ankles, lowering the body as far as is necessary to grasp the object. Get the arms well under the load; then lift with

a slow steady pull using the leg muscles instead of just the back muscles. Keep the load close to the body. It may first be balanced on the knee and then lifted to the hip, chest, or shoulders where it can be carried.

Apply these principles in such activities as raising windows, lifting the baby off the floor, carrying suitcases, carrying the laundry, etc.

5. *Work which involves carrying.* Do not carry a load if it can be pushed or pulled. Use a cart to carry groceries or a heavy basket of wash to the lines. Use a wheelbarrow or wagon to carry other heavy loads. If the load must be carried, keep it close to the body. The closer it is, the less strain there will be on the back. In

carrying a pail of water extend the other arm sideways for balance, and shift the body weight toward the free side to compensate for the load. Whenever possible divide the load. Distribution of the weight makes carrying two small bundles easier than one large one.

6. *Riding in a moving vehicle, bus, or subway.* When able to sit, assume the correct and relaxed sitting position. "Give" with the motion of the vehicle.

When standing and holding to a strap or pole, face the front. Grip the floor with the feet and leg muscles. The feet should be 6 inches or so apart, with knees slightly bent to absorb the shock of sudden starts and stops more easily. Let the body give with the motion of the vehicle.

The Foot and Leg

The foot is the most important contact we have with the earth. Our two feet must last a lifetime. Because no second pair will be issued, let us take good care of them now.

Each foot is composed of twenty-six bones, held together by ligaments and moved by many small muscles. Because the bones are small, solid, and compact, the foot is able to withstand the many shocks and quick movements made by the body. Most authorities agree that there are two arches to the foot. One is called the transverse, anterior, or front arch; it extends from the big toe across the foot to the little toe. The second arch, the long or longitudinal arch, extends from the base of the big toe to the heel along the inner border of the foot. Both of these arches are supported mainly by muscles. One of the most important areas of the foot, which is rarely mentioned as an arch, extends from the small toe to the heel. This section of the foot is supported by ligaments that are sec-

ond only to the strongest in the body. It is important to note that it is this area which should carry much of the weight borne by the foot.

The normal foot is not necessarily one with a high arch, but one with correct alignment of its bones, good action of its muscles, and good weight distribution. It should show no corns, calluses, or blisters. Each toe should extend from the foot in a straight line, no one toe crowding its neighbor. The great toe should continue the straight line of the inner border of the foot. In addition, the many joints of the foot should permit considerable movement; similarly, the ankle joint should be freely movable, allowing for ease and grace of movement.

The ability of the foot to do the work of support and locomotion, without strain, depends largely upon:

1. Position that bears the weight best.
2. Good tonus of the muscles of the foot and leg.

3. Proper strength and position of the ligaments.

For the foot to be placed in the most efficient position for work, it should toe straight ahead in standing and walking; the weight is carried on the heel and on the outside of the foot, with special emphasis on lengthening of the great toe. These pressure areas will form a triangle of balance, or, in other words, a three-point landing area for each foot, and should maintain the arches in good position.

The toes must exert strong action in standing, in walking, and especially in running if the arches are to remain strong. In running, as the weight is borne by the ball and toes, the transverse arch takes the shock, assisted by the ankle and knee joints. In jumping, the foot is flat on the floor on the take-off, the weight quickly transferring from heel to ball as the body extends in the spring with a strong push-off from the toes. In landing, to relieve the foot of shock, the ball hits first, instantly bending the ankle, knee, and hip.

MAIN FOOT AND LEG FAULTS

It has been said that nearly three-fourths of the population of young adults have symptoms of weak feet. Some authorities feel that foot weakness is the most common form of physical impairment. The following are some foot and leg faults most frequently observed in students.

Pronation: Feet tip inward toward each other. The inner ankle bone becomes prominent and the long arch is flattened. This is a weak foot.

Hallux Valgus: Marked tendency of big toes to turn outward toward the other toes of the foot. A mild to a marked degree of condition may be found. If marked, it may result in a bunion forming on the big toe joint.

CAUSES: Short sock, short or pointed

shoe, marked pronation. Heredity has been mentioned by some authorities as a cause.

Metatarsalgia: A metatarsal arch is "fallen" or depressed and is associated with pain when this region of the foot bears weight.

CAUSES: Improper shoes, incorrect shoe fitting, and short stockings. (These are infrequent in young people, common in adults.) Prolonged standing or walking on hard floors may also be a contributing cause.

Tight Heel Tendons (Achilles): May be associated with stiffness of legs, which is contributory to general awkwardness in walking, running, dancing, and in all sport activities.

CAUSES: Inactivity, high heels.

Hyperextended Legs: The legs are sprung backward through the knee area, making an awkward and poor balance of the total body structure—often associated with tipped pelvis, hollow back, and pronation.

CAUSES: Weakness of leg muscles and careless standing positions. Sometimes this is associated with functional bowlegs (Figure 2A), sprung knees, or "crosseyed" knees noticed in children and in young adults. Posture speaking, this condition shows from the frontal plane. The knees are sprung apart and cannot be brought into contact with one another without effort. Hyperextension may be associated with this condition. (In correction of this fault, the heels and toes must be placed together in the standing position to avoid pronation. By rotating the knee caps outward and by tightening the buttock muscles which rotate the thighs, the inner border of the knees are brought into contact with each other. This straightens the legs and reduces hyperextension as well as maintaining better muscular balance of the entire leg



Fig. 2. Legs.

(Figure 2B). Conscious and patient effort on the part of the student as well as the teacher will correct this very awkward standing and walking position.)

CARE OF THE FEET

For foot efficiency it is essential to follow basic rules of foot health. The following will provide a check list that may be used daily for this purpose.

- Proper balance of foot in standing and walking.
- Good general hygiene.
- Well fitting hose.
- Exercise.
- Contrasting baths.

Relaxation

Modern-day students take part in many school and extracurricular activities. If these are inefficiently scheduled or if they are allowed to become problems, tension mounts and insecurity results. Proper relaxation is thus essential for good health.

DEFINITION OF TERMS

Relaxation is a release or lessening of tension. Physically it may be described as a temporary decrease in the tension or contraction of a muscle. Psychologi-

- Resting with feet up.
- Change of socks or hose and shoes.
- Frequent bathing and good rubdown.
- Drying well.
- Cutting nails straight across the top.
- Preventing:

- Tinea.
- Inward rotation of legs.
- Toeing out.
- Pronating.
- Long periods of standing.
- Overweight or underweight.

Selecting good shoe:

- Fit larger foot first.
- Straight inner border.
- Low broad heel ($\frac{3}{4}$ to $1\frac{1}{4}$ inches for school or business).
- Plenty of room for toes in length, height, and width.
- Light, porous upper.
- Snug fitting heel, shank, and instep.

cally, it is a temporary diversion from serious tension-producing thought.

Normal fatigue comes after work. It is natural, normal, healthy and feels good. This kind of fatigue can be eliminated by rest and sleep.

Chronic fatigue is abnormal. It may be a result of illness, a disregard of normal fatigue, or lack of adequate rest. It may result in physical and psychological illness. It comes on slowly. It decreases one's energy output and is often responsible for a lack of zest for living.

False fatigue or boredom is just what the name suggests—a feeling of fatigue caused by lack of interest. When interest is stimulated false fatigue disappears.

Tension is produced by muscle contraction and is necessary to produce the energy for the performance of an activity. The amount of tension required for an activity varies with the type of activity. Some individuals use more tension to perform an activity than do others. Some individuals tense parts of the body during activity where tension is not needed. Tension produces fatigue. Unnecessary tension produces unnecessary fatigue. There is some tension involved even when the body is at rest; however, this is of such a small amount that the resulting fatigue is negligible.

Hypertension or *Hypertonus* results when greater tension or more prolonged tension is produced than is necessary for adequate living. It can develop when unnecessary tension is maintained while the body or parts of the body should be at rest. It should be avoided because its consequences can be serious.

THE VALUES OF RELAXATION

The practice of relaxation can conserve energy and prevent undue fatigue. This may increase efficiency and the capacity

for work and for play. The latter tends to produce enjoyment and satisfaction in the activity.

TESTING FOR RELAXATION

The testing is done by a partner. The individual to be tested assumes a back lying position and relaxes as completely as possible. The tester picks up one arm by the wrist and swings it at the shoulder joint, where tension or relaxation can readily be observed. Tension or relaxation in this area is usually an indication of the same characteristics in other parts of the body.

The results are recorded as shown below.

SYMPTOMS OF TENSION AND HYPERTENSION

Some of the physiological symptoms which may result are: hypertonus in muscles (rigid inflexible muscles), cramped and restricted body movement, unusual body postures, restriction in joint flexibility, restricted breathing, poor circulation, constipation, diarrhea, colitis, dysmenorrhea and pain which in turn increases hypertonus in muscles.

The following behavior symptoms may be manifest: irritability, sensitiveness to noise and confusion, lack of ability to concentrate, insomnia, sensitivity to the behavior of others which places a strain on friendships.

	None	Little	Moderate	Great Deal
Assisting (helping the tester)	_____	_____	_____	_____
Posturing (holding the part in a set position)	_____	_____	_____	_____
Resisting (hindering the tester)	_____	_____	_____	_____

Some other indications of tension are listed below. A check on these may help to evaluate one's ability to relax.

It is important to make a check of these from time to time to evaluate improvement in one's ability to relax.

WHAT OTHER DEVICES MAY BE USED?

1. Warmth.
2. Increased liquids.
3. Massage.

Yes No

Do I often feel fatigued? _____

Do I get annoyed easily? _____

Do I tear about at breakneck speed? _____

Do I drum aimlessly on the desk? _____

Do I find it hard to sit still? _____

Do I jump at slight noises? _____

Do I smoke too much? _____

HOW MAY RELAXATION BE BROUGHT ABOUT?

1. Concentrating on relaxing.
2. "Unlocking the body" by loosening up the musculature system.
3. Improving postural habits.
4. Increasing sleep and rest.
5. Good nutrition.
6. Avoiding constant excitement.
7. Budgeting time to avoid undue pressure.
8. Balancing work and recreation.
9. Balancing "rest against effort, calmness against strain, quiet against turmoil . . ." (Rathbone).
10. Relaxing psychologically:
 - (a) Examining yourself—are you doing too little or too much?
 - (b) Keeping free of fear, worry, and anger.
 - (c) Developing hobbies and sports—if sedentary life have active hobby; if very active, a quiet hobby.
 - (d) Doing creative activity.
 - (e) Playing for fun and amusement.

4. Relaxed positions:

- (a) Lying on hard surface.
- (b) Lying on side with leg on pillow.
- (c) Back lying with knees bent.
- (d) Back lying with legs up on chair or extended up against wall.
- (e) Short periods of rest at intervals.

5. Exercises:

- (a) Rhythmic exercises—not too strenuous but deliberate alternation between complete stretching of muscles and release of tension.
- (b) Rolling, arm swinging, leg swinging.
- (c) Head circling, arm circling, trunk springing.
- (d) Correct breathing.

SUGGESTIONS FOR RELAXATION

1. *Keep yourself in good physical condition.*
2. *Move efficiently, using only those muscles necessary to bring about the desired movement. Awkward movements and poor carriage call upon extra muscles and tax extra energy.*

3. Get plenty of sleep and rest—avoid fatigue. Plan your program daily so that rest is not sacrificed.
4. Avoid that "last minute rush"—budget your time. The pressure of that last minute may "tie you in knots."
5. Undertake only what is humanly possible for you to do. Learn to say "No!"

if asked to do too much. Much confusion and that panicky feeling can be avoided.

6. Spend the time it takes to worry in solving your problems and in doing your best so that few difficulties will arise.
7. Avoid overuse of coffee, cigarettes.

Menstrual Hygiene

Many of the former misconceptions about menstruation have been dispelled, and it is now looked upon as a normal physiological process. Girls and women are encouraged to carry on average everyday activities during menstruation and to practice the menstrual hygiene reviewed below.

WHAT IS MENSTRUATION?

Menstruation is a normal process. If the organs are functioning well, the periodic sloughing off of the uterine lining should carry on without pain. This occurrence should be regular, a complete cycle averaging twenty-eight days, although it may range from twenty-one to thirty-five days in individual cases. The normal flow is small or moderate in amount and lasts two to three days. It is possible to decrease the time of longer periods by hygienic living, with emphasis on the same factors which tend to eliminate menstrual pain. A girl who usually has normal periods may experience some discomfort if she has recently been ill, had a cold, been chilled, been overtired, lacked sleep, changed environment, or is emotionally concerned about anything.

MAY ONE TAKE PART IN USUAL ACTIVITIES?

The average woman with normal menstruation may carry on her usual activities during the period. Normal activity at this

time is in fact beneficial and essential for most women. Those with a painful period often find that the pain is relieved by the stimulation received from exercise. Today many women, with the use of tampons, are able to swim during the period without any difficulty. A few find it uncomfortable to swim in very cold water at this time but this is an individual matter. Showering, tub bathing or sponging, and a deodorant are especially necessary during this time.

WHAT IS DYSMENORRHEA?

1. Painful menstruation may be classified as:

Slight dysmenorrhea: discomfort, slight pain, or cramps.

Moderate dysmenorrhea: very uncomfortable, able to go to classes.

Severe dysmenorrhea: necessary to remain in bed.

2. Reasons:

Fatigue

Constipation

Weak muscles

Poor carriage

Lack of exercise

Chilling

Attitude or apprehension

Mental or physical pressures

Change of environment

Anatomical fault

3. Relief:

Balanced life.

Rest and sleep—between periods as well as during them.

Diet.

Activity.

Doctor's advice.

Exercise to develop strength and to relieve congestion or tension.

EXERCISES FOR RELIEF OF DYSMENORRHEA

Knee Chest Position: This position removes the pressure of the upper part of the body from the pelvic region and is for immediate temporary relief. It should be done at the time of the dysmenorrhea. Stand on hands and knees with one hand over the other and with the knees 6 inches apart. Bend the arms and rest the elbows on mat, head resting on hands and chest close to or touching mat. Keeping upper legs straight under hips, exert slight pressure on back to cave it in. Hold position one to five minutes and follow with Mosher.

Mosher Exercise * or Abdominal Pumping: For the best results this exercise should be done 10 times every day of the month and continued for several months even though relief is not experienced at first. Lie on back with knees bent and hands resting on lower abdomen. Gently force the abdominal wall upward, relax, and draw it in as far as possible. Proceed slowly and rhythmically without lifting the chest, tip-

ping the pelvis, or making it a breathing exercise.

Billig Exercise †: For results this exercise period should be repeated three times every day and continued for several months until relief is obtained. The purpose of this exercise is to stretch the soft tissues in the pelvic area. When tight they can produce the postural defect of hollow back which may cause pressure on the nerves of the area. Stand with left side toward a wall, heels and toes together, and just far enough away that the left forearm and hand may be placed horizontally against wall at shoulder level with the elbow directly opposite the shoulder joint. Place the heel of the right hand in the hollow that may be felt just behind the right hip joint. Tuck the hips under by strongly contracting the abdominal and buttock muscles, and hold this position forcing the knees straight, locking them in such a way that they seem forced backward. While forcibly maintaining this position take a big breath, let it out, and then push the left hip forward and toward the wall.

Avoid any twisting of the body, sliding of elbow up or down the wall, or any elevation of left shoulder. The shoulders must be kept low and in line with the left upper arm. The knees must be kept straight. The movement must be forced beyond the point of hurting if any progressive stretching is to occur. Do three times with your left side to the wall, then repeat three times with your right side to the wall.

Nutrition

The balanced diet—these are familiar words to all of us. Stop, think, and evaluate their meaning. Do you actually know what constitutes a balanced diet? Are you one of those who never considers the constituents of your daily diet except when

your weight indicates a check on foods? Weight is only one indicator of an unbalanced diet. Foods affect many body processes, and they play a definite role in the

† Exercise used by Dr. Harvey E. Billig, the Billig Clinic, 536 South Hill Street, Los Angeles, Calif. Write for pamphlet.

* Exercise originated by Dr. Clelia Mosher.

development and maintenance of a pleasing or negative personality. There are certain signs that will tell a person whether his diet is a proper one. Check the following—is your diet showing?

Physical signs:

- Proper weight
- Good posture
- Firm muscles with good coordination
- Shiny, smooth hair
- Clear complexion
- Clear bright eyes
- Smooth skin
- Good elimination

Other signs:

- Vim, vigor, vitality
- Good disposition
- Alertness
- Sound sleep
- Good appetite

Just eating the right foods does not always insure good nutrition. There are other factors that are also important:

- Sleep and rest.
- Fresh air and sunshine.
- Correction of physical defects.
- Removing emotional disturbances, such as worry and fear.
- Regularity of habits.
- Proper amount of any kind of exercise.

Do you know what the foods are that you should have every day? They are divided into four basic food groups so that they will be easy to remember. Eat from each of these groups every day.

Dairy Foods: 4 or more glasses of milk for teenagers; 2 or more for adults. Cheese, ice cream, and other milk-made foods can supply part of the milk.

Meat Group: 2 or more servings. Meat,

fish, poultry, eggs, or cheese—with dry beans, peas, nuts, or peanut butter as alternates.

Vegetables and Fruits: 4 or more servings. Include dark green or yellow vegetables or yellow fruit for vitamin A; citrus fruits, tomatoes, or another good source of vitamin C.

Breads and Cereals: 4 or more servings. Enriched or whole-grain; added milk improves nutritional value.

WEIGHT CONTROL

To the college student and adult, the maintenance of optimum weight is essential. It is more desirable during the college years to be normal in weight or slightly overweight than to be underweight. To gain, one needs to take in more calories including foods of higher caloric value—over and above the minimum requirements as listed above. Second helpings at meals are advised for those who have the capacity for larger meals. Otherwise food can be taken more often—perhaps at regular times between meals and before retiring. Increasing rest and sleep and learning to relax are conducive to decreasing one's energy output and to gaining pounds. Add to these will power and the will to gain for more effective results!

It is recommended that adults be normal in weight or slightly underweight. The same principles apply to losing weight as to gaining it, but in reverse. The basic principle is that of taking in fewer calories than needed; this will force the body to use its stored fat. Many formula diets of low caloric mixtures are being introduced widely, as are appetite-curbing agents. These may be temporarily effective but they are chiefly adjuncts to carefully controlled diets and supervision by physicians. Low caloric foods may be substituted for higher ones

WHAT FEMALES SHOULD WEIGH*
(in stocking feet and indoor clothing)

AGE	4'	4'2"	4'4"	4'6"	4'8"	4'10"	5'0"	5'2"	5'4"	5'6"	5'8"	5'10"	5'0"
10	58	61	67	73	79	85	93	101	109	117	125		
12	57	62	68	74	80	88	98	104	112	120	128		
14	60	65	71	77	84	92	100	108	116	123	131		
16				84	91	99	105	111	118	126	134		
18				94	100	105	109	115	121	128	136	144	152
20				101	105	109	113	119	125	132	140	147	154
22				105	107	111	115	120	126	133	141	149	158
24				107	109	113	117	121	127	134	142	150	158
25 and over	Small Frame						109	114	120	128	134	142	147
	Medium Frame						116	121	128	135	143	150	159
	Large Frame						124	130	137	144	152	157	167

From Arthur H. Steinhaus, *How to Keep Fat and Like It*. (Chicago: The Dartnell Corporation, 1957). Reprinted by permission of the author.

Fig. 3. Desirable Weights.

but the basic four food groups, including vitamins and minerals, are still essential. In fact, those who want to lose weight need to add little or nothing to the "essential four" group.

In addition to eating less, the overweight person can help herself by exercising regularly in order to burn more calories and increase the energy output. Walking at a good rate uses up 300 calories an hour; playing tennis one hour uses up 700 calories. Muscle tone or firmness and circulation are also greatly improved.

It is helpful to keep a weekly record of one's weight—weighing at the same time, on the same scale, and with the same amount of clothing. Consult a modern table of desirable weights, not average weights. Of additional interest is a record of one's measurements. It is encouraging

to find that certain areas of the body are increasing or decreasing in size even though the actual weight may reach a temporary plateau.

My weight is _____ pounds. My height is _____ inches.

My structure is _____ average type _____ slender type _____ stocky type.

My weight should be approximately _____ pounds according to the age-height-structure charts.

Recommendations:

- _____ Check with the Health Service.
- _____ Consult with physical education advisor.
- _____ Consult with the nutrition expert recommended by the physical education or home economics department.

Physiology and Exercise

As we put this body of ours through its paces each day it is interesting to note just what happens to it. Our 206 bones are held together by 696 muscles, and these are responsible for all our movement and action.

Muscles are made of millions of tiny cells, and each of these cells is supplied with a separate nerve strand that receives the impulse causing the muscle to contract.

Our body contains one hundred thou-

sand miles of blood vessels. Think of it, enough to stretch around the earth at the equator four times! About five quarts of blood fill these arteries, veins, and capillaries, and a drop of blood makes a complete circuit from heart to lungs, back to heart, artery, capillary, tissue, capillary, vein, and back to heart about once every minute. During heavy exercise the heart may speed up its work so that the circuit is completed nine times in one minute. The pressure of the blood is subject to change as is the rate of the heart beat. The force of gravity makes its presence known because blood pressure is higher when the subject is standing than when sitting or lying down. Strenuous exercise will increase blood pressure in order to push blood through the system faster, but the pressure will fall back to normal rapidly if the subject rests following exercise.

The pulse may be taken before exercise to determine the subject's normal rate. In most of us the pulse is about seventy beats per minute. Immediately after exercise the pulse will be very rapid, perhaps 100. But after a minute, and certainly after two minutes, the pulse will again be normal. This illustration shows the extremely fine mechanism at work in our bodies. When there is a need for nourishment in the tissues during exercise (and oxygen is that nutrient) a tiny nerve center near the heart sends an impulse out, and blood begins to enter the heart faster; the heart beats faster to get rid of this excess, and our pulse goes up!

To show how the human body is capable of adjusting itself to do certain specific work, let us examine a trained athlete. We exercise only occasionally; he does it regularly and vigorously. We find that his heart is beating only about sixty times per minute. But although it is beating more slowly it is putting out more blood with each beat. Thus, exercise does not put too much strain on his heart when he is in com-

petition. Even our hearts can be trained to our desires! There is no scientific foundation for the belief that exercise injures the healthy heart.

Have you ever run a block, then stopped only to find that you are breathing hard? That, too, can be easily explained. Just as more blood activity is required during exercise, more oxygen is needed, too. This task is accomplished by breathing faster, thus increasing the rate at which oxygen is taken into the lungs. During exercise oxygen must be supplied quickly to the muscle tissue. In the event that it does not get there quickly enough the body is prepared to take emergency measures. It has prepared for such an event by storing sugar that has been broken down into simple parts. When needed, this sugar burns giving off oxygen and lactic acid. After exercise you will find that you continue to breathe rapidly for a short time in order to restore the oxygen that was used.

Have you also kept on with strenuous exercise after you had developed a real feeling of distress because of breathlessness, and then suddenly had this distress disappear and be replaced with a decided sense of relief? This is called "second wind." Physiologists do not completely understand this phenomenon, but it is thought to be the result of a coordinated adjustment of a number of functions which contribute to a change in rate and depth of respiration, rate and rhythm of the heart, muscle size, and temperature.

There has been a great deal of misinformation about exercise—its value, its place in a school program, and the kind and amount of exercise needed in adult life. It is interesting to note that most physiologists have a good word to say for exercise. Arthur Steinhaus, eminent physiologist, has written "Facts and Fancies About Exercise" to dispel some of these mistaken conceptions.

"FACTS AND FANCIES ABOUT EXERCISE" *

1. *Does regular exercise lengthen life?* There is no good evidence that exercise, even hard training, either lengthens or shortens life.

2. *Can a person injure his heart with strenuous exercise?* There is no evidence that a normal heart may be permanently injured by exercise, no matter how strenuous. In cases of extreme exertion the heart may suffer "acute dilatation." This rare condition has been shown to be temporary. Athletes recover completely in a short time. All observed cases of death due to circulatory failure occurring while the deceased engaged in strenuous work have turned out to be cases in which the victim's heart or circulatory system had previously been seriously damaged by disease. (See also pages 8 and 9.)

3. *Is strenuous exercise harmful for children?* There is no evidence that exercise, no matter how strenuous, in itself, is harmful to children, provided they are in a good state of health and nutrition.

4. *May one exercise after a heavy meal?* Strong excitement with or without exercise retards digestion; but exercise or work without such emotion, unless very strenuous, does not interfere with digestion. Persons with already damaged hearts should not only avoid strenuous exercise after a large meal but should also avoid the large meal, because stretching of the stomach seems to cause a reflex constriction of the blood vessels in the wall of the heart. Whereas the consequent reduction of nutrition to the wall of an already weakened heart may thus become the deciding factor in bringing on a heart attack, there is no reason to believe that this would happen to a normal healthy heart.

There is no evidence that the danger of drowning is increased by eating in moderation immediately before swimming.

5. *Why do people sometimes become very sick and vomit five to ten minutes after strenuous exertion?* This is probably

a condition similar to mountain sickness. It has been called "sport sickness," and is in some way related to the shortness of oxygen experienced by the athlete and perhaps to a drop in his blood sugar. It is aggravated by warm weather, and usually relieved by further exercise. It occurs particularly in highly trained athletes and is entirely harmless. There are cases on record of athletes participating successfully in three track events even though they suffered severe attacks between events.

6. *Is exercise a good way to lose weight?* Exercise requires the body to burn up more food, but this extra oxidation is surprisingly small. In the accompanying table is shown the amount of exercise that an average 155-pound man must take to burn up one pound of body fat. With each

Work Portions That Will Burn Up One Pound of Body Fat (4,320 Calories)

(Each pound of fat burned would result in the loss of about 1½ lbs. of body weight)

Think for 2,160 hours	Shovel 114,739 lbs.
Sew at least 131 hours	send into wheel-
Stand for 160 hours	barrow
Crochet 154 hours	Ride horseback for 14
Write for 154 hours	hours (trot)
Tailor for 96 hours	Cut stone about 14
Knit for 88 hours	hours
Work eleven 8-hour	Saw wood about 10½
days in an office	hours
Sing for 77 hours	Freehand gymnastics
Walk 144 miles (1	10½ hours
mile in 30 min.)	Ride horse about 9½
Drive auto for 68	hours (gallop)
hours	Fence for 8 hours
Ride a horse for 44	Parallel-bar work 7½
hours (walk)	hours
Play piano for 44	Walk 3¾ miles (1
hours	mile in 12 min.)
Lay 14,731 bricks	Wrestle 5½ hours
Carpenter four 7½-	Play football 4.8 hours
hour days	Run 43.2 miles (1
Launder about 22	mile in 6 min.)
hours	Run 129 hundred-yd.
Play billiards for 32½	dashes at 10 sec.
hours	Walk 48 times to top
Waltz 20½ hours	of Washington Mon-
Wand drill for 20½	ument
hours	Do 5,714 push-ups
Walk 66½ miles (1	from floor
mile in 17½ min.)	75 fifteen-min. periods
Play Ping-pong for	with electrical vi-
17½ hours	brator
Footrot 16 hours	

* From Arthur H. Steinhaus, *How to Keep Fit and Like It* (Chicago: The Dartnell Corporation, 1937). Reprinted by permission of the author.

pound of fat so consumed, four ounces of water, normally held with the fat, would also be lost. Exercise for reducing weight is complicated by the effect of exercise on appetite and the intake of food. Moderate exercise if not accompanied by greater food intake will cause slow weight reduction; if, however, it is vigorous enough to stimulate the appetite, it is possible that more extra calories will be taken in than are "exercised off." For these reasons, no weight reduction program is likely to be successful without some attention to diet, not even the much-advertised effortless programs of slenderizing. The taking of pills to reduce hunger is not without danger.

7. *How can weight be taken off?* Most obesity is due to overeating; but before starting a strenuous weight-reduction program, a person should seek his physician's advice to make sure he is no rare exception. Then he can take off weight by following a few simple rules. First, plan to lose not more than two or three pounds per week. Second, decide to develop new eating habits for the long pull. Just taking smaller helpings, no seconds, and no between-meal snacks may do it. Third, each day take in fewer food calories than needed, but never stint on such essential foods as milk, eggs, lean meat, fruits, and a variety of raw and cooked vegetables. Fourth, increase fuel consumption by a regular, moderate exercise program that does not stimulate the appetite; e.g., an hour of Ping-pong a day for 17 days will take off 13½ pounds.

Because many books deal adequately with diet, only a little is said here. The calorie needs of average, moderately active, adult men and women range from 2,250 to 3,000 per day. Women use less than men, small people less than large people, and older people less than the young. If a person eats less than he needs, some of his fat will be used to make up the difference. If he eats more, the excess is stored as fat. Sometimes even on a rigid diet the body weight stays constant for days and then suddenly drops several pounds with much unreason. In such cases there was a temporary retention of water. The accompanying table lists food quantities, each of which contains 100 calories. Some foods yield many calories per pound.

These concentrated or fattening foods are found at the beginning of the list. Progressively through the list the calories become scarcer with the most bulky or least fattening foods at the end. A person who needs to lose weight is advised to select his portions beginning with meats in the middle and going to the end, but not to omit milk. If he wants to gain weight, he had better select his portions from the beginning down through the meats in the middle but include also eggs and some raw and cooked fruits and vegetables.

8. *Does regular exercise increase a person's resistance to infectious diseases such as colds, pneumonia, and tuberculosis?* There is no valid proof that exercise in any way helps us to fight bacteria. Our ability to fight off diseases is more closely related to good diet, adequate rest, and freedom from worry.

9. *Does regular exercise make for more or redder blood?* No, but because during exercise blood moves faster, the red corpuscles wear out sooner; hence, corpuscle production is increased to keep up the normal supply.

10. *Do any forms of exercise bring harm to the body?* Barring accidents there are very few sports whose proper pursuit even to extremes is likely to harm the body. What are these few exceptions? Some surgeons have found that the cartilage covering bones in the knee and elbow joints of soccer players and boxers, respectively, may become pulped or shredded from the continual pounding these joints take in the normal pursuit of these sports. Since cartilage has no blood supply, this deterioration is not repaired. But boxing is likely to cause even more serious damage, especially to the brain. Any severe pummeling of the head, even without a knockout, results in tiny lacerations and hemorrhages in brain tissue. The brain tissue so destroyed is never replaced. Each such injury adds further damage until it shows in personality changes, emotional disorders, slurred speech, slowed responses, and the stumbling gait of the so-called "stumble bum" or "punch drunk" that mark too many of the former great and not-so-great of boxing.

Head injuries in football and other activities can show the same after-effects, but here they are considered unfortunate acci-

dents and the injured player is substituted without loss of prestige. Only in boxing do men proceed systematically and deliberately to inflict such injuries in order to win, and the injured one suffers the disgrace of losing. Arguments extolling boxing as a builder of courage, speed, etc., sound weak and hollow against these facts. As a means of self-defense, boxing is far inferior to wrestling and judo.

11. *Should women practice any special precautions in exercising?* Sports have been variously criticized as making a woman masculine and even depriving her of the ability to bear children. These claims are absolutely unfounded. True it is that many women of somewhat mannish appearance and traits have excelled in sports, but sports had no more to do with producing this mannishness than did the clothes they wore.

Women are by nature not as strong as men, nor do they have the capacity for as much speed or endurance. Nevertheless, they profit from exercise designed to develop these attributes.

Women usually excel in events requiring flexibility and grace.

Because of the peculiar anatomy of women's reproductive organs, there is reason to give credence to studies which claim that exercise or work in which the breath is held and extra pressure placed on the abdominal organs, as in heavy lifting or landing from a high jump as in the pole vault, is unsuited for women and may even cause menstrual disorders. There is some evidence that strengthening of abdominal muscles may reduce menstrual disorders.

Should women exercise while menstruating? Some women have made their best athletic records; others swim in freezing water while menstruating, with apparently no ill effects. The best authorities recognize great differences in women's ability at this time and usually recommend that

a girl carry on her regular program, insofar as she feels herself capable, avoiding both excessive exertion and cold baths.

CALORIE TABLES

Food Quantities—Each Contains 100 Calories

1 tablespoon (2 pats) butter or oleo	1 large banana
1½ tablespoons honey	1½ cantaloupes (5-inch diameter)
2 tablespoons salted peanuts	1½ oranges (medium)
2 slices crisp bacon (5 inches long)	2¼ fresh peaches (medium)
2 tablespoons whipped cream	¼ cup baked beans
2¼ tablespoons sugar	¾ cup canned sweet corn
3½ tablespoons coffee cream	¾ cup fresh peas
¼ of a chocolate ice cream soda	1¼ cups cooked onions
2 dried figs (medium)	1½ cups pumpkin
4 graham crackers	1½ cups beets
2½ walnuts	1½ cups pulled rice
8½ almonds	2 cups or 27 large strawberries
4¾ dates	2 cups spinach
4 tablespoons or 88 seedless raisins	2¼ cups cooked tomatoes
½ cup of grape juice	2¼ cups white turnips
½ cup of whole milk	3 cups cooked cauliflower
1 shredded wheat biscuit	3 cups sauerkraut
1½ slices white bread	3½ cups fresh string beans
9 ripe olives (medium)	4 cups shredded cabbage
14 green olives (medium)	6 cups diced celery
1 oz. serving of roast ham	1 slice watermelon (6 by ¾ inches)
1 oz. lamb chop	1½ large cucumbers (total 17 inches)
1½ oz. serving of turkey	1½ heads lettuce (4-inch diameter)
1½ oz. serving of roast beef	6¼ green peppers (medium)
1 trout, 7 inches long	7 stalks broccoli (5 inches long)
1 large egg	35 stalks asparagus (6 inches long)
½ small sweet potato	100 small red button radishes
1 boiled white potato (medium)	
1 large pear	
1 large apple	

Exercises

These exercises are particularly helpful in improving the general condition of the

body. The breathing exercises encourage relaxation and a freer use of the chest.

TEST YOURSELF

Try these tests to discover where you are strong or weak. Check the types of exercises needed or recommendations suggested and apply them to the "Exercise Worksheet" at the end of this chapter.

<i>If you cannot</i>	<i>then your</i>	<i>and you need exercises for</i>	<i>Check if needed</i>
1. Sit with legs outstretched forming a right angle	"hamstrings" and lower back muscles are tight,	leg, hip, and lower back flexibility.	.... ..
2. Lie on back with legs straight in air over body	"hamstrings" and lower back muscles are tight,	leg, hip, and lower back flexibility.	.....
3. Stoop with knees together and heels on floor	Achilles' tendon is tight and balance poor,	leg flexibility and balance.	.....
4. Lie on back and stretch arms overhead to touch elbows to floor	shoulders are tight,	shoulder flexibility.	.....
5. Stand in wide stride and do a single half knee bend alternately to R and L	legs are weak,	leg strength.	.. ..
6. Lie on face with hands on floor under shoulders and push up to hands and knees 10 times	arms are weak,	pushing to increase shoulder and arm strength.	.....
7. Hang with arms bent for 15 seconds	arms are weak,	pulling and hanging to increase shoulder and arm strength.	.....
8. Do abdominal curls 10 times with hands under neck and knees bent	abdomen is weak,	abdominal strength.	.....
9. Stand with abdomen flatter than ribs above	abdomen is too prominent,	abdominal and pelvic control.	.....
10. Show less than 1 inch of fat in a pinch of fat over the ribs	you are fat,	increasing energy output. And watch your diet!	.. ..
11. Do 4 squat thrusts in 2 seconds	agility is low,	increasing energy and endurance.	.....
12. Jump and mark on a wall at least 15 inches above reach height	power is inadequate,	increasing general strength and agility.	.....
13. Jump up and down 25 times in squat position with arms hugging knees	feet and legs are weak,	foot strength, correction, and endurance.	.....
14. Stand against wall with lower back just one finger from wall	pelvic angle may be increased,	pelvic control.	.. ..
15. Walk length of balance beam on first trial	balance is poor,	training in balance.	.. ..

FLEXIONS *

Lie on your back with your elbows bent, hands at shoulders, legs extended. Circle the arms sideways and upward parallel to floor, lifting the left knee to the chest. Circle the arms back to the shoulders (the elbows at side) returning the leg to mat. Repeat with the right leg. Continue smoothly and rhythmically alternating right and left. "Reversed" breathing is combined with this movement: exhale as the arms and knee move upward.

Flexions are primarily for general flexibility. They also aid in relaxation of the neck, shoulders, and chest, and flexibility of the shoulder, hip, and knee.

EXTENSIONS *

Lie on your back, arms at sides, the legs extended. Raise the extended arms forward and upward to touch the floor as one leg is lifted. Lower the arms and leg, and repeat with the other leg. Keep the heel pushed down, legs and arms straight, raising the leg as high as possible without bending either knee. Breathe as in flexions.

This is fine for flexibility of the shoulder, hip, knee, and ankle and for strengthening the deep abdominal muscles.

SCISSORS *

Lie on the side, with one arm lightly but completely extended under the head, palm up, the other arm bent, elbow at shoulder level, finger tips resting on the mat at eye level, and thighs and legs extended. From this relaxed position raise the legs from the floor, and, keeping the extended position, swing one forward and the other backward,

alternating rhythmically. Breathe rally; avoid tension in the neck and shoulders.

Scissors involve practically all the muscles of the back, abdomen, pelvis, and thighs, but those most involved are those most often slighted in ordinary life. The motion of the thigh is so free that its weight tends to carry the pelvis also forward and backward. This is resisted by the reverse action on the other side. Hence, this exercise becomes really a resistance exercise of pelvis flexion and extension; the muscles most developed are those most needed in polse, namely the abdominal muscles, the back supporting muscles, and those of most value in the support of the viscera.

WALL BICYCLE *

Lie on your back with your legs stretched up a wall. Bend the left knee, allowing the foot to slide down the wall. Extend the left knee, keeping the foot on the wall then pushing up with the heel. At the same time that the left leg extends,

Fig. 4. Wall Exercises.



* Exercise evolved by W. Curtis Adams. Description found in articles by Dr. Stella Bradford, *Women's Medical Journal*, New York State Medical Association.

Exercise Progression

Find the exercises suited to you:

*Easy**Medium**Hard*

- | | | |
|---|--|--|
| 1. <i>Abdominal Curls:</i> Back lying with knees bent—touch hands to knees 5 times. | With hands crossed on chest and knees bent—curl forward to touch one elbow to opposite knee. | With hands under neck and knees bent—touch one elbow to opposite knee. |
| 2. <i>Head Lifters:</i> Cross leg sitting, hands holding ankles—stretching tall. | Back lying, grasping one knee—chest lifting. | Arm side, shoulder height, back lying—chest lifting. Try sitting slowly. |
| 3. <i>Back Builders:</i> Front lying—hip pinching. Add alternate and double leg extension backward and upward, 1 inch from floor. | With hands under forehead—tighten hips and lift hands, arms, and chest from floor. | With arms out to side or extended overhead—tighten and lift arms, head, and chest from floor. |
| 4. <i>Dips:</i> Standing on hands and knees with one hand over other, slow arm bending to touch elbows to floor and stretching. | Standing on knees—arm swinging forward to push off from floor. | Lying on face with hands on floor under shoulders—push up to hands and knees. |
| 5. <i>Bends:</i> Standing—heel raising and slow knee bending. | Stride standing—single knee bending and pushing with hands from floor. | Stride standing—slow alternate half knee bending and stretching. |
| 6. <i>Waistlers:</i> Sitting with legs out-stretched—alternate leg swing over. | Back lying with arms out to side—alternate leg swing to opposite hand. | Stride back lying—trunk bending forward to touch one hand to opposite foot. |
| 7. <i>Hips Away:</i> Sitting with knees bent—double knee rolling from side to side. | Elbow support side lying—grasping top knee to chest, kick replacing, and roll to other side. | Arm side, shoulder height, back lying with legs in air—double leg swinging from side to side to touch mat. |
| 8. <i>Others:</i> | | |

bend the right. Continue alternating flexion and extension rhythmically. Add the arm movement used in flexions. Reverse breathing as in flexions.

This is another body freeing exercise especially for the lower back, knee, and ankle and, when arms are moving, flexibility of chest. The leg and foot muscles are also developed, and the abdomen is stimulated by the pressure of the knees.

PUMPING *

Lie on your back with your knees bent and all muscles relaxed. Using one hand, locate a spot on the upper abdomen, and

inhale at that spot. Change the pressure spot and inhale again.

Gradually, by breathing one can learn to lift just that part of the abdominal wall indicated; gradually the chest becomes more flexible, falling with each inspiration, rising with each expiration. The intercostal angle widens, the ribs are elevated, and the chest diameters are increased.

Since the diaphragm and the anterior abdominal wall are both controlled by the respiratory center, the contraction of one and the relaxation of the other readily occur together. Pressure helps in localization and gives the effect also of a resistance exercise.

NOTE All exercises are to be done with free breathing. **DO NOT HOLD BREATH** when position is held. Gradually increase number of times exercise is performed as ability to do so increases. Exercise daily for best results.



1 NECK, UPPER BACK

POSITION: Lie on back on floor, back under shoulders, knees bent, feet on floor, arms extended overhead.

MOVEMENT: Slowly extend legs keeping water pulled in. Hold 5 to 10 seconds. Repeat. See note.



2 NECK, UPPER BACK

POSITION: Lie on back on floor, one knee bent to chest—hands clasped over leg.

MOVEMENT: Lift upper back from floor, keep head and lower back on floor, chin in. Hold 5 to 10 seconds. Repeat with opposite leg. See note.



3 UPPER BACK

POSITION: Stand or sit with arms bent at elbows and raised to shoulder height, shoulders low.

MOVEMENT: Pull shoulder blades together as gradually moving elbows back ward during 4 count. Hold on 4th count. Then slowly lower arms to side keeping chest, shoulders, and head in good alignment. This position may be held 5 to 10 seconds. Repeat. See note.



4 PELVIC CONTROL

POSITION: Lie on back on floor, back under hips, knees bent, feet on floor.

MOVEMENT: Slowly lower legs, exerting "pull in" on waist muscles. Hold 5 to 10 seconds. Repeat. See note.



5 PELVIC CONTROL

POSITION: Lie on back on floor, knees bent.

MOVEMENT: Lift hips from floor, keeping body in straight line from head to knees. Hold 5 to 30 seconds. Repeat. See note.



6 PELVIC CONTROL

POSITION: Sit on floor, legs extended. Rest on elbows, waist pulled in.

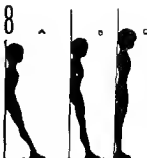
MOVEMENT: Raise both legs 1 inch—hold 2 to 5 seconds. Raise to 2 inches—hold 3 to 5 seconds. Raise to 3 inches—hold 3 to 5 seconds. Increase height of legs only if waist can be kept pulled in. Repeat. See note.



7 LOWER BACK, ABDOMEN

POSITION: Lie on back on floor, back of right hand under shoulder blades, hands clasped under head. Knees bent, feet on floor.

MOVEMENT: Slowly lower legs, exerting strong "pull in" on waist muscles. Hold 5 to 10 seconds. Repeat. See note.



8 BALANCED CONTROL

A. Stand with head and back flat against wall, feet away from wall far enough to allow hollow of back to be in contact with wall.

B. Step back closer to wall, still keeping spine in contact with wall.

C. Step back closer to wall, pull waist muscles in and tighten buttock muscles. In this position there should be only a slight hollow in lower back region. Hold 5 to 10 seconds. Repeat. See note.



9 CHEST EXPANSION

POSITION: Lie on back on floor.

MOVEMENT: 1st. Inhale and push on diaphragm. 2nd. Hold breath and pull on diaphragm. Repeat. See note.



10 SPINE STRETCHING

POSITION: 1st. Hang with feet off floor, shoulders low, waist pulled in. Hold 1 to 10 seconds. 2nd. Hang from stall bar or low bar with heels on floor, shoulders low, waist pulled in. Hold 1 to 10 seconds. Repeat. See note.

Fig. 5. Correctional Exercises.

EXERCISE WORKSHEET

Test Findings	Recommendations	Exercises	No.
Weight: _____ lbs.	_____	Agility and Warm-up	
Height: _____ in.	_____	1.	
Structural type: _____		2.	
Correct weight: _____		3.	
Measurements:		General Flexibility	
Bust _____ in.	_____	1.	
Waist _____ in.	_____	2.	
Hips _____ in.	_____	3.	
Thigh _____ in.			
Postural Analysis:		Specific Joint Flexibility	
Head _____	_____	1.	
Shoulders _____	_____	2.	
Spine _____	_____	3.	
Hips _____	_____		
Knees _____	_____	General Strength and Endurance	
Feet _____	_____	1.	
Medical Examination:	_____	2.	
		3.	
Motor Test:	_____	Strength for Specific Area	
	_____	1.	
"Test Yourself":	_____	2.	
	_____	3.	
Other Recommendations:			
Relaxation _____	_____	Relaxation, Balance, and Poise	
Endurance _____	_____	1.	
Menstruation _____	_____	2.	
		3.	

The unused transverse fibers of the abdominal muscles also join in because contraction of one muscle involves motion by its neighbor. Moreover, if one muscle contracts, with the body relaxed, equilibrium is maintained by the action of its opposing muscle or antagonist.

5-COUNT BREATHING

Lie on your back with your knees bent, one hand resting on the upper abdomen. Inhale, getting a pumping action of the diaphragm. Exhale, and contract abdominal muscles, causing a flattening of lower back

* Exercise evolved by Curtus Adams.

(pelvis tipping) on mat. The chest will lift automatically. Relax after exhalation, and return to the starting position.

Practice to make all parts smooth and blended together. This is especially good for freeing the chest, strengthening the abdomen, and correcting the position of the lower back and hips.

NINTH RIB EXPANSION †

Lie on your back with your knees bent, hands pressing on the lower ribs. Inhale, and widen the ribs by pulling outward. Exhale, and press the ribs inward. Keep the neck free of tension.

CHEST PACKING †

Lie on your back with your knees bent,

one hand on the upper chest. Inhale, lifting the upper chest under hand. Exhale while holding the chest elevated. Repeat with two additional breaths, and then relax chest. Prevent the neck from tensing. This is recommended for increasing chest flexibility and for filling in the hollows on upper chest and along the collar bones.

Now that you have tested yourself and obtained information about your specific needs, use the sample "Exercise Worksheet" to plan your own course in developing or maintaining better body mechanics. Consult your physical education teacher for further help. In the Number column rearrange the numbers of exercises in the order you wish to do them. Once you have prescribed for yourself, follow your program faithfully for the best results!

† Exercise evolved by Dr. Joel E. Goldthwait.

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CHAPTER FOUR

Gymnastics

The word "gymnastics" comes from the Greeks and literally means "naked art." No country or civilization reached the height and honor of physical development as did the Greeks. They felt that the unclothed body exhibited faults in development which, if observed, would motivate youth to correct such inadequacies in physical development. Sculptors, artists, philosophers, historians, and poets were encouraged to observe youth as they worked in the palaestra.

Gymnastics, or conditioning exercises, are organically stimulating, developmental, corrective, and enjoyable exercises to be used when time and place make this kind of group activity necessary. The exercises are invented movements for the purpose of reaching the specific objectives of flexibility, strength, and agility, which are basic to dance and sports.

It cannot be too strongly emphasized that exercises are never ends in themselves, but are given to maintain fitness and to overcome some fault or lack in development. They are similar in purpose to the scales and finger exercises employed by musicians. The exercises may be taught in one or two lessons a week or can be given as part of the "warm up period" prior to any physical education activity hour. They are also recommended for individual use in the daily ten to fifteen minutes at home or in a small space.

The emphasis in gymnastics or "conditioning work" is placed on the normal free action of the body in motion. Suppleness, freedom, and muscular competency of the spine are considered fundamental in securing a free and poised carriage. As the chest and shoulder girdle is freed and the head

no longer juts forward due to tightness and tension, it is possible to strengthen the neck and upper back with greater ease.

Such exercises in gymnastics, when carefully chosen and skillfully taught, have the effect on the body of a molding process. They tend to bring about a normal segmental relationship resulting in poise and control of the body both at rest and in action. In other words, the body seems to be at "peace" with itself. Attaining high skill in sports is largely dependent upon such a foundation and indeed may lessen much of the tedious learning process involved for the beginner.

There are three main headings under which faults and lacks in development can be classified: (1) stiffness, obvious in the movements of the joints, spine, and muscles, (2) lack of power, shown in the use of muscles, and (3) awkwardness or lack of freedom and coordination, evidenced in the movements of the body.

If these faults are to be corrected and the deficiencies overcome, the objectives to be set up are *flexibility*, *strength*, and *agility*. Flexibility must take the place of stiffness, ligamentous tension must be released, and overcontracted muscles normalized before a perfect relation between the different segments of the body can be achieved and an adequate musculature built.

In the following chart locate your own particular deficiencies.

The body must be able to respond im-

mediately and with accuracy in any situation calling for spontaneous action, and to do this with the greatest efficiency and the least expenditure of effort. The poise of the body at rest, and the carriage and efficient use of the body in action, should be the criteria for judging how thoroughly fundamental work has progressed.

Our purpose in offering gymnastics is to provide the means and the method for correcting faults and perfecting bodily carriage. If the body is to be ready for any type of activity it must be free, supple, strong, and perfectly under control. The limited amount and variety of physical activity in modern life has made this ideal impossible, and the deficiencies in the body are seen in stiffness, weakness, and awkwardness.

Through a course in gymnastics such faults, lacks, and deficiencies may be met and overcome in a comparatively short time. When this has been accomplished youth is irresistibly drawn into sports and activities of all kinds, which will be the foundation of physical recreation for life after college.

It is important not only to have a "get fit" program but also to maintain this fitness through a "keep fit" program of exercises that can be increased in endurance or "overloaded" to meet a person's requirements. This has been done through the Red, White, Blue, and Gold series. For best results do these exercises regularly!

<i>Faults and Lacks</i>	<i>Where Located</i>	<i>Corrected by Exercises for</i>
Stiffness, Tension	In muscles, joints, and spine	Flexibility
Weakness	Muscle groups	Strength
Awkwardness	Movement	Coordination and agility

RED, WHITE, AND BLUE SERIES OF HOME EXERCISES FOR FITNESS *

General Directions †

1. In standing feet and knees are held together. Weight on outside borders of both feet with some pressure in big toe. Thighs and hips held firm, shoulders low, push up with back of head.
2. All exercises are to be taken with free breathing, mouth closed, neck and shoulders relaxed.
3. Each exercise should be taken approximately 10 times to each side, increasing the number of times as endurance is gained.
4. If exercises seem too fatiguing, put less into it and take them fewer times. Build resistance slowly.
5. If exercises seem too easy, put more into it and take them more times.
6. Take exercises regularly—each day.

Red Series

1. Stand with feet together, knees together. Tighten thighs and hips. Swing arms easily backward and forward.
2. Stand with hands low on hips. Lift L knee and kick vigorously to the side; repeat with R leg.
3. Stand with feet together. Lift L knee and press with both hands to abdomen; repeat with R knee.
4. Stand with feet apart, R arm behind back. Swing L arm straight forward, upward, and around in circle, fist clenched easily. Repeat with opposite arm.
5. Stand with feet apart. Bend body forward downward from hips and spring trunk easily up and down.
6. Lie on back with arms stretched sideways, knees bent, feet on floor. Tap feet two times, bring knees to chest, slowly

lower feet to starting position, keeping knees bent, waist pulled in.

7. Lie face downward, arms stretched sideways. Slowly raise arms and head, hold and lower.
8. Lie face downward, hands under forehead. Stretch and lift L leg upward about six inches; repeat with R leg.
9. Kneel on hands and knees, one hand over the other. Bend elbows to touch floor and lower head to hands.
10. Kneel with toes turned under. Swing arms forward and backward, rock back and stand; repeat Exercise No. 1.

White Series

The White Series is based on the Red Series and represents progression. The Red Series must be mastered first by the beginner. The Blue Series will follow later.

1. Stand with feet together, tighten thighs and hips. Swing arms easily forward and backward and then sling strongly upward. Keep this up in continuous rhythm.
2. Stand with hands low on hips. Lift L knee and kick leg vigorously forward. Repeat with R leg.
3. Stand grasping chair or partner. Slowly raise heels and bend knees, stretch knees, and lower heels. For first few times bend knees, half way only.
4. Stand with feet wide apart. As body bends forward from hips, slap front of thighs alternately while hands travel downward on legs to floor, walk out on floor with hands, thumbs in, until body is supported on hands and feet. Return in 10 counts.
5. Stand with feet wide apart, hands at sides. Bend body sideways three times to L, sliding hand lower on leg and springing deeper each time. Pull trunk up and repeat to R.
6. Sit with legs straight forward, hands supported on floor beside hips. Cross L leg over R as far as possible, tap toe to floor. Return vigorously and repeat with R leg.
7. Sit with legs crossed, grasp ankles. Stretch back up as straight as possible. Slowly turn head L and then R.
8. Sit with knees bent, feet together, hands supported on floor beside hips, hips lifted. Kick L leg vigorously forward. Repeat with R leg.
9. Lie on back, knees bent, feet on floor,

* The Red, White, and Blue Series were compiled by Emily R. Andrews, Western Reserve University, for Civilian Defense Community Organization, and are based, in general, on Niels Bukh and Emily R. Andrews, *Fundamental Gymnastics* (New York: E. P. Dutton & Co., Inc., 1928).

† Note: The white and blue series are to follow as soon as control, balance, and co-ordination are gained. Be sure to get all your series; they are worked out progressively.

arms stretched sideways. Roll knees to L and touch floor, knees together. Return and repeat to R.

10. Lie face downward, hands under forehead. Keep hands on forehead, lift head and shoulders and both legs slightly from floor.

Blue Series

The Blue Series is based on the Red and the White Series, which should be mastered in order before going on to the Blue. Apply the general directions for both Red and White Series.

1. Stand with feet together, knees together, tighten thighs and hips. Swing arms forward and fling sideways-backward. Return, keeping arms at shoulder level. Keep this up in continuous rhythm.
2. Stand with hands low on hips. Lift L knee and kick leg vigorously to the side; repeat R leg. Lift L knee and kick leg vigorously forward; repeat with R leg. Lift L knee and kick leg vigorously backward; repeat with R leg.
3. Stand grasping foot board of bed or hands of partner. Bend knees as far as possible, keep whole foot on floor and stretch knees slowly, keeping body erect.
4. Stand with feet wide apart, arms extended forward, palms together. Twist the trunk to L as far as possible, sliding R hand up L arm; repeat to the R side. Continue from side to side. Keep arms at shoulder level.
5. Stand with feet wide apart, hands clasped on back of head. Bend body to the L three times; repeat to R. Do not bend at waistline but above it.
6. Sit with legs straight forward, hands supported on floor beside hips. Lift legs and place them apart in a wide stride position, and reach forward to slap floor as far as possible. Sit up, bring legs together, place hands beside hips, and lift chest as high as possible.
7. Lie on back, knees bent, feet on floor, hands resting on joint of thighs. Lift head and slowly "curl" forward, sliding hands down thighs to touch knees. Make this continuous—do not rest between each curl.
8. Sit with legs straight forward. Reach forward to slap floor beside feet, rock back,

placing hands (with elbows bent) on floor back of hips as knees bend to chest. Reach forward and continue rhythmically.

9. Lie on back with arms stretched sideways on floor. Lift L knee to chest and clasp. Replace leg vigorously, pointing toes. Repeat with R leg.
10. Lie face downward, hands on floor beside chest, knees bent. Straighten arms lifting body from floor so it is supported on hands and knees. Keep body straight.

Gold Series

The Gold Series is based on the Red, White, and Blue Series, which should be mastered in order before going on to the Gold.

1. Stand with feet and knees together. Swing arms alternately backward and forward, as when walking. Then add alternate raising of heels, starting with right heel as left arm goes forward. Arms should be straight, swung below waist level, and hips tight.
2. Jump and hop by lifting knees and opposite arms alternately. The left knee and right arm start the exercise. Knee is lifted forward with lower part of leg perpendicular to floor. Head high, arms straight.
3. Stand with hands low on hips. Lift left knee. Circle it clockwise, then replace it close to other foot. Alternate with right knee. After alternating several times try circling the knee counter-clockwise.
4. Stand. Lift left foot backward and grasp it with left hand. Pull it backward and replace it close to other foot. Alternate with right foot.
5. Stand. Swing both arms forward to shoulder height, downward, sideways to shoulder height, and downward in continuous action.
6. Stand with feet wide apart. Bend downward to grasp left ankle with left hand. Keeping knees straight, exert pull on ankle and spring trunk up and down. Rise and bend to other side.
7. Stand with arms bent and fingers touching shoulders. Jump in place with arm stretching upward, bending, stretching sideways, bending, stretching forward, bending, stretching downward.



Fig. 6. Exercise #18.

8. Stand. Swing arms forward to shoulder height, fling them sideways at shoulder height, swing forward again and downward. Keep legs together and hips tight.
9. Squat with hands on floor between knees. Extend left leg to side and alternate with right leg. Try changing from side to side with a hop on the supporting foot.
10. Stand with feet wide apart. Slowly bend alternate knees halfway.
11. Stand with feet wide apart. Lean trunk forward and place hands on knees. Extend trunk forward. Try raising arms sideways as trunk extends forward.
12. Stand with feet wide apart, trunk extended forward. Twist trunk sideways with arm flinging from side to side.
13. Jump between a wide stride and one jump in place. Clap hands overhead on the jump to stride.
14. Lie on back. Quickly raise trunk and reach with hands to slap floor beside feet. Keep knees straight.
15. Stand on knees and lean forward on left hand. Twist trunk sideways while flinging right arm sideways upward.
16. Stand on knees. Sit back on heels, clasp hands behind back, bend body forward with head on knees. Extend trunk forward and upward to a diagonal position. At same time extend arms backward along back drawing shoulders together. (See Figure 6)
17. Stand on knees. Jump up to a stand.
18. Stand. Swing both arms forward to shoulder height, downward, sideways to shoulder height, and downward. Add heel raising on the swing forward and sideways. Try jumping on the swing forward and sideways.

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Stunts Tumbling and Apparatus Activities

These activities are fun to do. They are, at the same time, conducive to all-round development and to maximum efficiency of bodily movement.

If his "motor equipment" is normal by the time a baby is four years old, he should be able to turn a somersault. Probably all of you were able to do this at an early age, but, as you grew older and did not practice these stunts, you may have thought you had forgotten how to do them. Why not test yourself? Can you do a forward roll now? With a little practice, you can relearn this skill and, if you have never tried it, give yourself the thrill of this new and exciting experience.

To develop and maintain a good breathing mechanism, you should get "out of breath" at least once daily. This you can do by running, jumping, climbing, or rolling. These activities are found in many of our sports as well as in stunts and tumbling. You should "hang" at least once a day to help straighten your spine as an aid in overcoming a round back and to develop a good chest. This you can do on the rings, ropes, and ladders. A good "roll" a day might keep the doctor away.

Select stunts, tumbling, and apparatus activities to gain:

1. A supple, balanced carriage of the body.
2. Courage, initiative, and perseverance.
3. Relaxation and safety-first skills.
4. Strength, endurance, and balance.

Look over the stunts, described below and then get ready to test yourself. Dress in loose, free clothing—skirts, even though short, may be a

handicap. Try the *Novice* stunts and perfect your performance. When successful, check off the stunts for your running score and proceed to the *Stuntster*. More stunts could have been included in each level but this will give you a variety and allow you to pass gradually from the easy skills to the more difficult ones.

If you can do thirty of the following stunts, give yourself a score of *Excellent*; if twenty-five, a score of *Good*; if twenty, a score of *Fair*; if fifteen, a score of *Poor*.

<i>Novice</i>	<i>Score</i>
1. <i>Top, L and R</i> Stand with feet together, draw circle on floor around feet. Jump up and turn completely around coming down within the circle facing forward. Repeat turning to opposite side.	_____
2. <i>Turk Stand Sit, 4 times</i> Fold arms over chest and cross left foot over right. Sit on the floor and rise without unfolding arms or uncrossing feet.	_____
3. <i>Dog Run, 25 feet</i> Bend over, place hands on floor, and walk forward on hands and feet. Try running or turning in circles.	_____
4. <i>Hang, 10 seconds</i>	_____
5. <i>Forward Roll</i>	_____
6. <i>Human Wicket Walk, 10 feet</i> Bend forward and place hands on floor close to feet. Walk forward or in circles keeping knees straight.	_____
<i>Total</i>	_____

Stuntster

7. *Through the Stick*
Hold hand or broom handle behind body, palms forward. Lift stick over head to front of

body. Step with left foot over the stick and into space between stick and body. Follow with the head and body until stick is skinned down the back and over the hips. Step out and stand. Reverse by starting with right foot.

8. *Backward Roll to Stand, 3 times* _____
9. *Tip Up, 10 seconds*
Squat and place hands on floor between knees. Press elbows firmly against knees and slowly tip forward on hands. Lift one foot, then the other, until balance is gained. Keep back straight. _____
10. *High Kicking Hop Toad*
Place hands on floor as for hand stand. Swing right leg upward followed immediately with the left. Scissor the legs once, twice, or three times before returning to floor. _____
11. *Dive Over Obstacle*
Take a running approach to a rolled up mat, jump from both feet, and spring over the mat landing on the hands. As soon as the hands touch mat, tuck the head, bend the elbows, roll onto the shoulders and then to a stand. Practice for smoothness without a hard landing. _____
12. *Jump the Stick*
Grasp stick in front of body with arms straight. Jump over stick lowering arms and swinging stick under feet as jump is made. Before jumping lift one foot over the stick to see if there is enough room to make the jump. _____

Total _____

*Tumbler*13. *Head Stand from Tip Up*

Take position for tip up, placing knees on elbows, and balance for 5 seconds. Drop forehead to mat from this position, raise legs upward until straight, and hold balance on triangular base formed by hands and head.

14. *Jump the Stick and Jump Back*15. *Dive Over 2 and 3*16. *Cartwheel, L and R*17. *Hare Hop, 15 feet*

Jump forward to hands as though diving over an obstacle. Land on the hands quickly drawing feet to a squat and spring forward to hands again. Repeat several times. Try for height and distance.

18. *Mule Kick*

Place hands on floor as for hand stand. Throw weight onto hands at same time bending and kicking both legs backward-upward. Hold head up to keep balance.

*Total**Expert*19. *Cartwheel, 4 continuous turns*20. *Head Stand, hold 10 seconds*21. *Stride Jump Kick, 2 times*

Jump upward and lift legs forward in a wide stride. Reach with hands to touch toes at height of jump. Keep legs straight.

22. *Hand Stand*23. *Hand Spring*24. *Walk Over*

Stand on hands raising one leg high in air with

force enough to turn the body over, landing on same foot immediately followed by the other foot.

*Total**Couple or Group*25. *Indian Wrestle, L and R*

Lie on back beside partner with head toward partner's feet. Ifold each other's shoulder with near hand. Raise leg near partner three times and on the third time hook leg around partner's and attempt to pull partner into a backward roll. Change to other side of partner and repeat using other leg.

26. *Eskimo Roll*

This is a double Forward Roll. Partner No. 1 lies on back and raises legs in air. Partner No. 2 stands with feet on either side of partner's head and grasps partner's ankles. Partner No. 1 grasps ankles beside her head. Keeping grasp firm Partner No. 2 dives forward, ducks head, and rolls over onto shoulders and back pulling Partner No. 1 after her. Repeat rapidly in one direction. Later try in circle and backward.

27. *Stride Sitting, Partner Pull*

Sit on floor facing partner with legs stretched wide and soles of feet braced against those of partner. Exert pull backward, changing back and forth several times. Gradually progress until back touches floor on pulling backward. Keep knees straight.



Fig. 7. Stunt #27.

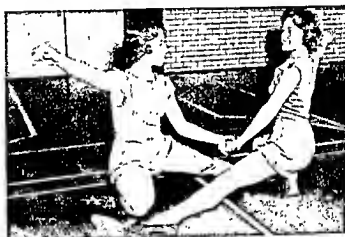


Fig. 8. Stunt #28.

28. *Stride Standing, Alternate Knee Bending*

Stand in wide stride facing partner, right hands joined. Slowly bend left knees at least half way. Repeat to right, joining left hands.

29. *Knee Shoulder Stand*

Partner No. 1 lies down on back with knees bent and slightly separated, hands reaching upward. Partner No. 2 steps between partner's knees, places hands on partner's

knees with fingers pointing backward, leans forward, and places shoulders against partner's hands. Partner No. 2 rises to a hand stand with the weight balanced on partner's hands and knees.

30. *Merry-Go-Round*

Four couples form a circle grasping wrists firmly. Every other one sits on floor with legs straight, feet interlocked on floor in center. The

standing members step backward and lift the sitting members until weight is supported on heels and body is extended from heels to head. Standing members lean outward and run around in circle revolving as a Merry-Go-Round. Change direction.

Total _____

TOTAL OF 30 STUNTS _____

APPARATUS ACTIVITIES

Types

1. Suspension—strengthens arms and shoulders.
2. Jumping and Vaulting—develops agility and power.
3. Arm Support—develops upper trunk.

Fig. 9. Bent Arm Hang.



Groups (Refer to numbered books in Bibliography)

1. Low and High Balance Beam.
 - (a) Walk length of beam. Walk back backwards. Turn on beam. (6) (10)
 - (b) Dip knee L and R on each step. (6) (10)
 - (c) Mercury—balance on one foot, raise other leg backward as both arms are raised sideways. (6) (10)
 - (d) One leg squat. (6) (10)
 - (e) Rolls, Jumps, Locomotor stunts. (6) (10)
 - (f) Mounts, Vaults, Balances, Seats. (6) (10)
2. Rings.
 - (a) Still Rings.
 - i. Skin the Cat. (6) (10)
 - ii. Bird's Nest. (6) (10)
 - iii. Inverted Hang. (6) (10)
 - iv. Knee Hang. (6) (10)
 - (b) Flying Rings.
 - i. Forward and backward swing preceded by three steps to gain momentum. Progress to double-foot push on floor between each swing. (6) (10)
 - ii. Turns. When enough momentum is gained, turns can be made at the high point forward and at the rear. (6) (10)
 - iii. Perform exercises for still rings. (6) (10)
 - (c) Traveling Rings.
 - i. Holding two rings, alternate bent arm pull. (7)
 - ii. Traveling. (7)
 - iii. Cut-off. (7)
3. Box, Horse, Buck.
 - (a) Knee-mount, Stand, Dismount. (7) (10)
 - (b) Courage Vault. (7) (10)
 - (c) Squat Vault. (6) (7) (10)
 - (d) Knee-Chest or "Danish" Vault. (7)
 - (e) Straddle Vault. One-Half Straddle Vault. (6) (7) (10)
 - (f) Thief Vault. (7) (10)
4. Ropes, Poles, Ladders.
 - (a) Climbing. (6) (7) (10)
 - (b) Jump to Bent Arm Hang. (7)
 - (c) Inverted Hang. (6)
 - (d) Bent Arm Swing. (7)
 - (e) Swing Jump Over Rope or Bar. (7)

5. Stall Bars.

- (a) Stand with back to bars, hand traveling downward keeping knees straight. Add arm bending and stretching in grasp position.
- (b) Stretch grasp standing, alternate and double high knee lifting. Add extending the legs on lowering.
- (c) Inverted Hang—Face stall bars, bend forward, and place back against bars. Reach upward with hands and grasp bar. Lift hips and legs overhead against bars.
- (d) Bent Arm Hang—Climb stall bars, grasp top bar with palms facing outward, back to bars. With elbows bent at right angles, hang for 10 seconds or longer.
- (e) Squat Jump—Face stall bars, grasp bar at shoulder height keeping arms straight. Jump to a squat position with feet on second bar from floor. Spring high in air arching body and then landing back on floor. Repeat several times without stopping.
- (f) Stride Angle Hang, Arm Bending—Face bars with hands wide on shoulder-height bar, feet wide apart on second bar. Bend arms, touch forehead to same bar as hands. Keep back flat, legs straight.

6. Even and Uneven Parallel Bars

- (a) Straight Arm Support. (6) (7) (10)
- (b) Straddle Seat. (6) (7) (10)
- (c) Riding Seat. (6) (7) (10)
- (d) Rolls. (6) (7) (10)
- (e) Upper Arm Balance. (6) (7) (10)
- (f) Various Mounts, Vaults, Dismounts. (6) (7) (10)

7. Trampoline. (6) (10)

SAFETY

General Safety

1. Progress from the easy skills to the more difficult. Be sure you have satisfactory accomplishment in each before going on to the next.
2. Warm up before participation. Watch for fatigue and carelessness.
3. Be sure to utilize the entire class hour.
4. Complete the activity in good form.



Fig. 10. Stall Bar Exercise: Stride Angle Hang.

Never carelessly finish or leave the apparatus without good form. Never give up in the middle of a performance.

5. Check all equipment for unsafe conditions often.

6. Apparatus should be adjusted properly as to position and height for each performer.

7. All apparatus should be carefully put away after class. To leave it unattended invites the kind of playing that results in accidents.

Assisting and Spotting

1. Spotting and active assisting need careful planning in order not to interfere with the performer. Be alert and prepared for any mishap.

2. Take a firm well-balanced stance with stronger arm closer to the performer and body leaning toward her.

3. A stand-by spotter should be present in all overhead apparatus work as well as for the more difficult vaults.

4. Know the correct form for stunts and apparatus activities and recognize common faults. You can place yourself in the best position to protect the performer and to aid in her execution of the skill.

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CHAPTER SIX

Dance

Dance is the oldest of the arts. Cave drawings created by primitive man tens of thousands of years ago indicate the presence of dance in his early culture. Even in primitive civilization dance functioned as an important part of social and religious life. It consisted of unorganized and impulsive movements, spontaneous in form but serious in purpose. Many were ritualistic and passed on as traditions.

In the early classical period dancing was an integral part of drama. Religious dances from the previous period crystallized into religious drama and realistic dance. With the addition of the spectator came the realization of the aesthetic value of the dance. The values of physical development were realized and dance was used as a means of developing a sound and beautiful body.

During the dark ages not much was done with dance. However, with the coming of the Renaissance it flourished again. In the sixteenth century "court dances" became popular. Because of their definite form these dances have played an important part in some phases of modern dance composition. Some of the more familiar dances included the Allemande, Gigue, Gavotte, Minuet, Pavan, and Saraband. A little later the Polka, Mazurka, and movements of the Waltz were added.

Paralleling the development of the folk dances was that of the ballet. Great change and progress in the development of the dance were made during the sixteenth and seventeenth centuries. Since that time dance has flourished, and today, in addition to being an established art form, it is playing an important role in physical education.

English Country Dance

HISTORY

The two main divisions in English country dance were the morris dances, derived from the old English sword dances, and the country dance, an outgrowth of the morris dances. The morris dances were ceremonial, spectacular, and had their beginnings in the celebration of pagan, religious fertility rites.* These were very vigorous, requiring endurance, agility, and were performed by men only. Those men in the English communities who practiced these dances were few in number—a closed professional society in which each man devoted hours to learning the dances. The dances were usually performed at the spring festivals. Many were done in a circular design; a man held the hilt of his own sword in his right hand and the tip of his left-hand neighbor's sword in his left hand. The costumes varied slightly, but usually the men wore red tunics of military style, black trousers, and cloth caps. † As time went on, some of the dances were done with handkerchiefs rather than swords. All the dances were characterized by vigorous movement under complete control.

The country dances had no such special significance. They were light, gay, everyday dances for country folk, done by the masses of people for pleasure. The steps were simple and the love motive predominated. The country dances were a peculiar growth of England itself and reached their height

at the beginning of the seventeenth century. At that time the dances were performed in many formations: longways, squares, and circles. But toward the end of that century they gained favor in the courts and drawing rooms. With this gain in favor by the nobility, the longways formation began to supersede the circles, and progressive movements were instituted in the dancing. This process of corruption went on until the middle of the nineteenth century when the waltz and polka became popular. ††

English country dances were performed, even at gay festivals, with a reserve, dignity, and care characteristic of the English temperament. Except for arming and leading, the arms hung relaxed at the sides, the body was held erect and the feet kept close to the floor. The steps of the English country dances were always done lightly with few extraneous movements. Playford, in 1650, wrote a book, *The English Dancing Master*, and in this volume are preserved many of the very old country dances in original form. Cecil J. Sharp in his *Country Dance Book* has drawn from Playford's descriptions and music.

TERMINOLOGY

Arming: Advance forward two running steps to meet partner, book right elbows, turn around once with four running steps and fall back to place with two running steps. Repeat, hooking left elbows and turning counterclockwise.

Cast-Off: Turn outward and dance down the outside of the set, then back to place.

* Cecil I. Sharp, *The Country Dance Book*, Vol. 2 (London: Novello, 1913), p. 11.

† Anne Schley Duggan, Jeanette Schlottmann, and Abbie Rutledge, *Folk Dances of the British Isles* (New York: The Ronald Press, 1949), p. 35.

†† Sharp, *op. cit.*, p. 11.

Contrary: The girl or boy other than the partner performs in dances of two couples.

Cut: Spring onto the free foot, at the same time, swing the other foot forward, back, or to the side—a sharp movement.

Forward a Double: Take four running steps forward (R-L-R-L), bringing the left foot to place beside the right on step four.

Backward a Double: Take four running steps backward, beginning as above on the right foot.

Hands Across: Sets of four join right or left hands as directions state and move in circle once in windmill fashion. Sometimes this maneuver is called "right or left hand mill."

Hands Four: Sets of four join hands and dance around in a ring clockwise.

Hey: This is a rhythmical interlacing in serpentine fashion of two groups of dancers moving in single file and in opposite directions. "Heys" fall into two general classifications: (1) a straight line ("straight hey," "hey for three") and (2) the perimeter of a closed figure, circle, square, or ellipse ("circular hey," "progressive circular hey").

Longways for As Many As Will: Two long parallel lines of dancers are formed, men in one line, women in the other. Partners either face each other or face up the set.

Running Step: This is an even step with a little more elevation than in walking. The step is smooth, contained, and close to the floor.

Set: A spring sideways on the right foot is executed, followed by two steps in place, first with the left, then the right. Usually it is repeated to the left,

springing on to left foot and stepping right, left.

Siding: Partners face each other, passing diagonally right with four running steps, passing left shoulders, and making a half turn facing the partner on the last two steps. They return, passing right shoulders. Usually this is repeated to the left.

Slip: This is a term used to describe the slide step: step sideward right, close left to right, taking weight on left. Then comes a repeat, as directions call. The body is in the air most of the time.

Spring: This has more elevation than the running step; otherwise, it is the same.

Turn Single: Four running steps are taken, turning to the right in place.

The following are typical English country dances (numbers denote books listed in bibliography):

Black Nag (4, 5)
Christchurch Bells (4)
Gathering Peascods (1)
Mutual Love (4)
Newcastle (4)
Ole Mole (4)
Hunsdon House (1)
Hunt the Squirrel (4) (2)
Merry Merry Milkmaids (4)
Picking Up Sticks (4)
Ruffy Tufty (1)
Sellers Round (3)

The following are sample morris dances (numbers denote books listed in bibliography):

Blue Eyed Stranger: a morris handkerchief dance (1)
Sleight Sword: a morris sword dance (1)

American Folk Dance

HISTORY

As everyone knows, the United States is often called the "melting pot" because its population is made up of so many different nationalities. Beneath the surface this has meant that we have assimilated at least part of the culture of the different immigrant groups settling here. The American folk dance is a striking example of this immigrant contribution.

Since the English were among the first here, they tended to be the most important contributors. In general, two factors influenced English folk dancing in America: first, it was modified to suit the varying cultures developed notably in the North, the South, and the West, and second, there was the further modification of the dance as a result of the infiltration by other European groups. We are primarily concerned here with the English influence, but it must be remembered that the contributions of the other nationalities are equally important.

During the early colonization, community gatherings for the purpose of such work as corn husking, were common. Following the completion of work, dancing and singing took place. Many of the simple dances involved a game element, and these were carried over as the singing games usually taught to children but still enjoyed by older groups. Going a step further, we get into the more complex dances, with definite steps that must be learned. The specific types of folk dance being considered are the New England country dance, the Kentucky running set, and the Western square dance.

NEW ENGLAND COUNTRY DANCE*

*By the early part of the eighteenth century, Puritan rigor had begun to relax

... Dancing was now engaged in."† In New England, children were brought to dances as babies, and learned to dance when very young. Later they were polished up by dancing masters, learning manners first, then the steps of the dances, the quadrilles and minuet, and finally, the popular country dances. In Revolutionary days, everyone danced—taverns vied for dancers' favor, some even providing carriages for transportation. Some of the larger farmhouses had dance rooms built right in on the second floor. More commonly, however, the kitchen was used, the owner merely removing the furniture, and the fiddler frequently taking his place in the sink. These more informal functions were known as "Junkets" or "Heel-burners."

Characteristically, dancers were buoyant and straight, keeping strict time to the music. It was required that dancers wait until the prompter called the figure before they started its execution. The steps were easygoing, rather than jerky, with the men swaggering a little and raising their elbows with each step.

The music was usually divided into measures of eight; occasionally into four's and sixteen's, and two steps were danced to each bar. The two major forms of the dances were the quadrille and the longways set. Originally danced in five parts, the quadrille has been shortened to two characteristic three parts, numbered 1-3-5 or 1-2-4. In numbering, then, the five-part tradition has been preserved. Less experienced dancers always started on the sides

* Much of the material for this section has been drawn from Beth Tolman and Ralph Page, *The Country Dance Book* (New York: The Ronald Press, 1937). This is an excellent definitive study and is highly recommended.

† Oliver Perry Chitwood, *A History of Colonial America* (New York: Harper and Brothers, 1931), p. 592.

so they could see the figure executed by the head and foot couples before performing it themselves. In the old days, certain tunes went with certain dances and never were separated—this no longer is characteristic.

The formation for the quadrille is as follows:

X = Gentleman; O = Lady

Foot Couple

2
O X

Side Couple 3 X O 4 Side Couple

X O

1

Head Couple

The quadrille differs from the Western square dance formation in two ways: (1) in the Western square, the couples are numbered in consecutive order around the square, starting with the head couple and moving to the couple on the right; (2) in the quadrille, the head and foot couple customarily dance the figure together, followed by the two side couples, whereas in the Western square, the head couple most frequently dances with the right hand couple and so on around the square, dancing with each couple in turn.

The floor formation for the longways set is that of two straight lines, with men in one line and women in the other. Men and women may be facing each other or standing side by side all facing one end of the hall.

Additional terms used in country dance are included in the following glossary.

COMMON FIGURES USED IN THE NEW ENGLAND COUNTRY DANCE

Address Partners. Used in Quadrille. Gen-

tleman steps forward to center with the left foot, turns and faces partner, closes the right foot to left and bows. Lady slides the right foot to center, faces partner, steps back with left foot and bends both knees for curtsy, then draws the left foot to right.

Address Corners. Gentleman bows to the lady on left and partner bows to the gentleman on her right.

Allemande Left. Each person turns away from partner to his corner. Corners join left hands, walk around each other once, and return to original positions.

Allemande Right. Lady walks four steps to the left, passing in front of partner. Gentleman walks four steps to the right. Each meets new partner on corner; they join right hands and turn once around, walk back to place and balance partners.

Balance Partners. Partners face. Each steps to side with the right foot, points the left toe in front, steps back to place with the left foot, and points the right toe in front of the left foot.

Balance Corners. Same as above, done with corners.

Balance and Swing Partners. Balance step as given above, followed by the traditional swing, done with the Buzz step.

Chassez Right or Left. Glide or slide to right or left.

All Promenade. Partners stand side by side, either in the skating position or in the square dance promenade position. Using an easy shuffle step, with knees relaxed, they progress around the circle counterclockwise.

Docey-doe or Back to Back. Lady and gentleman advance toward each other, pass right shoulders, go around each other back to back and return to places.

Down the Center and Back. Used in coun-

try dances. Side by side, couples walk down the hall between the line of dancers; eight steps down and eight steps back.

Down the Outside and Back. Used in country dances. Gentleman and lady go eight steps down the outside of their respective sets, behind the line of dancers. Then they face about and return.

Cast Off. Usually done after "down the center and back." Means to go below one couple. Gentleman places left arm about next lady's waist. In that position both turn around to left stopping so that the one who casts off is below one place. Lady does the same to the next gentleman with her right arm.

Eight Hands Around (also Four or Six Hands). Join hands and circle left.

Forward and Back. Starting with left foot, advance three steps, then bring right foot up to left. Going back, start with right foot, and on the fourth count, bring left foot to the right.

Forward and Ladies to the Center. All join hands and go forward three steps, then back to place. Again go forward three steps; ladies drop hands and stand in center together, while gentlemen walk back to place.

Form a Basket. Ladies are in center, as above, facing in. Gentlemen walk forward, stand at left of partners. Gentlemen join hands, ladies bow slightly, allowing the men to raise joined hands over the ladies' heads. Ladies step back one step and join hands. Gentlemen may join hands inside ladies' circle in first step.

Grand Right and Left. Partners face and take right hands. They walk toward each other, pass right shoulders, drop hands, and continue walking in the direction in which each is facing. Each one then takes the next person by the left hand, and continues around, tak-

ing each oncomer with alternate hand until each reaches his partner again.

Grand Allemande. Each gentleman links right arm with partner and turns once around, then gives his left arm to the next lady, right to next and so on around the circle. Similar to grand right and left.

Half Promenade. Couples join hands and chassey across set to opposite side where they turn half around to face in the opposite direction.

Half Right and Left. Cross back to places, ladies on the inside so that in passing, gentlemen are on the ladies' right.

Ladies' Chain. Involves two ladies of two couples facing. Ladies advance toward each other, taking right hands in passing. Each gives his left hand to opposite gentleman, who turns her around in place. Ladies return the same way.

Ladies' Grand Chain. Used in quadrille. Same as above, except that four ladies are involved.

Gents' Grand Chain. Same as above.

Promenade Four. Gentleman takes his partner's left hand in his left, puts his right hand behind her waist and advances toward opposite couple who are coming to meet them. They pass to the right of each other and take each other's places. Then they turn half around and return the same way.

Right and Left. Two opposite couples cross over and pass through, ladies on the inside. When in the opposite couple's place, gentlemen take partner's left hand in their left, and both turn half around. Return to place and repeat the turn.

The following is a suggested list of New England country dances (numbers denote books listed in bibliography):

Boston Fancy (1)

Fireman's Dance (6)

Haste to the Wedding (1)
 Hull's Victory (1) (2) (6)
 Jefferson and Liberty (1) (6)
 Lady Walpole's Reel (1) (2) (6)
 Money Musk (1) (2) (4) (6)
 Mrs. Monroe's Jig (1)
 Old Dan Tucker (1)
 Old Zip Coon (Morning Star) (1) (6)
 Pop Goes the Weasel (1) (2) (6)
 Portland Fancy (1) (2) (6)
 Rye Waltz (2) (4) (5)
 The Tempest (3) (4) (6)
 Virginia Reel (Sir Roger de Coverley)
 (1) (2) (3) (4) (6)

KENTUCKY RUNNING SET*

The Kentucky running set comes to us from the mountains of Kentucky and throughout the southern Appalachians. According to Cecil Sharp, the great authority on English country dance, it is one of the oldest dance forms of England. It is danced by any number of couples, standing in one big circle. There are many patterns, but the typical form is as follows: As an introduction, all circle left, then the first couple moves to the second couple and executes the figure of the dance with them, then with the third, and so on around the circle. As the head couple goes on to the fourth couple, the second couple follows up by dancing with the third—the third couple follows up in the same manner and this goes on until every couple has followed up. It is continuous dancing, and exhausting if the circle is a large one. Usually the dance is finished with a "docey-doe."

As well as the large circle formation, it appears that the Kentucky running set may be, and frequently is, danced as a square. The figures used in many of the dances are

identical with some of those used in Western squares. Taking its origin from England, then, the Kentucky running set is a distinct form of English country dance and, also, is strikingly similar to the Western squares.

WESTERN SQUARE DANCE

The New England country dance and the Kentucky running set form the basis for the Western square dance. As the colonists moved westward, they took with them the dances they knew—and inevitably, these dances changed where living conditions made it necessary. Instead of living in small communities, the western pioneer frequently found his nearest neighbor miles away. Dancing masters were an impossibility where distance was so great. Owing to this, people needed, and developed, not precise and polished dances, but simple patterns which could be quickly learned and enjoyably performed.

The dances and calls, for the most part, were passed on from family to family, from caller to caller, by word of mouth. As the calls were transmitted, they were changed—something was lost, a new caller filled in the blanks, and a different call was born.

The common step used throughout the square dance is a light, gliding, or shuffling step, with the knees relaxed, back erect, and arms frequently bent at the elbows. There is nothing stiff—the body is loose and relaxed. Beginners should pay particular attention to this—often they tend to bound up and down vigorously and after the first dance find themselves completely worn out. Done correctly, a square dancer conserves his energy and is able to dance for many hours without excessive fatigue. Sometimes a two-step is used, and occasionally a stamp to accent a rhythm.

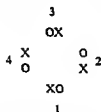
Music for the square dance is not definitely set as it is for the old New England

* This material has been drawn from Lloyd Shaw, *Cowboy Dances* (Caldwell [Idaho]: The Caxton Printers, Ltd., 1948), pp. 29-31.

quadrille. Any of the old-time favorites may be used, such as "Turkey in the Straw" or "The Arkansas Traveler," but with experience, many people find that one tune seems to work better with a certain dance than with others. The most satisfactory rhythms seem to be those written in either $2/4$ or $6/8$ time.

The square dance formation is given below. Note the numbering of the couples. The head couple is usually placed nearest to and with its backs to the head of the hall—musicians are usually at the head of the hall. The lady is always on the gentleman's right, and it is well to get this firmly in mind, since in many figures, couples will be moved around the set.

X = Gentleman; O = Lady



According to its most predominant characteristic, each square dance is usually placed in a classification. The most common classifications are listed below.

Each square dance is composed of three main parts: (1) introduction, (2) figure, and (3) ending. The dance is usually called by the name of the figure.

REQUISITES OF A GOOD CALLER

A good caller should possess the following:



Fig. 11. The Swing.

1. A loud, clear, and distinct voice.
2. A thorough knowledge of the patterns of the dance and of the calls to be used.
3. A good sense of rhythm.
4. A sense of analysis, so he can aid a beginner who is going wrong.
5. The ability to time calls so as to keep a number of sets together; to speed up the slow ones and slow down those who anticipate.

The reader should be familiar with the following steps and figures, and with their execution.

Types of Square Dances

Docey-Doce (second couple follows up)
Split-the-Ring
Symmetrical
Single Visitor
Line
Intermingling

Examples

Dive for the Oyster, Lady Round the Lady
Divide the Ring and Cut Away Four
Texas Star
The Pokey Nine
Forward Up Six
Grand March Change

COMMON STEPS AND FIGURES FOUND IN WESTERN SQUARE DANCE

Honors Right and Honors Left. Each man bows first to the lady on his right (partner) and then to the lady on his left (corner).

Two-Step. Step together, step.

Allemande Left. Each person in set faces his corner. They take left hands and walk around each other once, returning to original positions. This is usually followed by the Grand Right and Left.

Grand Right and Left. Partners face one another, join right hands, and advance toward one another, passing right shoulders and continuing on in the same direction. Each takes the next oncomer with the left hand and passes by in the same manner, continuing around the circle with alternate hands until each reaches his partner again. This is usually followed by the Promenade.

Promenade. Each couple marches side by side counter-clockwise around the circle until they return to original position in the set. The hands are frequently held in the skating position, but this may be varied.

Two-Step Promenade. This is the same as above, except that a two-step is used instead of the single shuffle step.

Promenade in Indian File. From the regular promenade position going counter-clockwise, each gentleman sets his lady down in front of him, so a single circle instead of a double is formed. This is usually followed by the call, "Turn right back in the same old track, and swing that gal behind you." Each gentleman turns and swings the girl behind him, setting her down in front at the completion of swing. This continues until each gent has his original lady again.

Forward and Back. Holding hands and facing the center of the set, everyone advances four steps to the center of the circle and four steps back.

Circle Right and Circle Left. All join hands, turn to the right, and walk around in that direction, changing to the left when the call is given.

Swing Your Partner. Each couple takes the regular dance position, except that instead of standing face to face, the right hips touch. Using a buzz or pivot step, they swing completely around or twice around in a clockwise direction.

Ladies' Chain. Two couples face each other. The two ladies advance toward each other, taking right hands briefly in passing. Then each gives left hand to opposite gentleman. Gentlemen place right hands behind the ladies' waists and turn them completely around to the left. Ladies return to partners in exactly the same fashion.

Right and Left Through. Two couples, facing, advance toward each other. Each dancer gives his right hand to the opposite and passes beyond him. Each gentleman then takes his lady's left hand in his left, puts his right hand behind her waist and turns her around him to the left. Then the two couples passing through each other again, repeat the pivot with the ladies, and they are again in their original positions.

Docey-Docey. The "docey-doe" is per-

Fig. 12. Ladies Chain.



formed with two couples and is actually a figure eight. It frequently follows the call, "Four hands up and here we go, around and around and a 'docey-doe'." Two couples are holding hands in a circle of four. The ladies advance toward each other, passing left shoulders, turn abruptly to the left, and return to her partner who takes her left hand in his. While the gentleman stands facing the center, he passes his lady around behind him. She circles him, then is taken by her right hand by the opposite

gentleman, who passes her behind him in the same manner. She then returns to her partner with her left hand, and this time her partner places his right hand behind her waist and pivots around with her.

In addition to these, which are found in many square dances, each dance has a characteristic figure from which the dance takes its name. The outstanding figure for each dance must be learned. Also, there are many variations of calls, and any number of calls may mean the same thing.

European Folk Dance

HISTORY

European folk dance is as old, or older than the countries themselves. When European society was predominantly agrarian, life tended to be almost all work and little play. Occasionally, however, peasants assembled in the village to celebrate marriages or church festivals, and at these times, dancing always played a prominent role in the gaiety. As suggested in the section on American folk dance, each community developed its own distinctive dance forms. Traditional dances were

passed down from generation to generation; as in the case of American dance, there might be numerous modifications, although basically they remained the same.

Through the Dark Ages some dancing was preserved by the churches, which accepted some of it as part of religious ceremonies. In this way the dance was carried through the ages, from the people, to the theatre, to the fashionable courts, and on to the village greens again.

Some of the folk dancing of Europe is



Fig. 13. Lithuanian "Hat Dance."

composed of very simple patterns, frequently a circle, and employs such steps as skipping and balancing. For these no special skills are required. Other types require precision and training, for the traditional steps are difficult to learn, and must be performed with great exactness. Many Irish dances fall into this second category.

On the whole, the dances follow the characteristics of the people who developed them. Some typify the country to such an extent that they are known as "national" dances. This will be noted in the following sections dealing with specific countries. The impossibility of including all countries has necessitated an arbitrary selection. To a large extent, the countries here chosen are those from which dances will be selected for classes. Information on others may be found in books listed in the bibliography.

SCOTLAND

The Scottish people, for the most part, have earned a reputation for industry, thrift, and a general practical nature. Although they are inclined to frown upon too much luxury and pleasure seeking, they approve of dancing as an art that has descended from their forbears. To learn Scottish dancing takes time, but it is time well spent, for the end result is a work of art. Characteristically, their dances are spirited, performed with a very erect carriage, and have sharp, angular, and exhilarating movements. The two main steps are the *schottische* and *battlements*: The latter is a sharp, downward movement of the free leg, with the other leg acting as a support. The downward movement may be made with a straight leg, or the leg may be bent at the knee, with the lower leg moving down for the accent. It is a brilliant movement, to be executed rapidly. These two steps are combined with any number of turns, jumps, and other types of footwork.

The steps, techniques, and style of Scottish dancing are rigorously defined by the people themselves. Because of this popular understanding, the Scots are qualified to judge their dancing and to maintain high standards of performance. They frown upon an indifferent performance. The two most characteristic dances are the *sword dance* and the *Highland fling*. The sword dance was performed on the eve of battle. Crossed swords were placed on the ground. A dancer touching one with his foot was an ill omen for the coming battle. In the present day, the dance is a competition, and a competitor touching the sword is eliminated. The Highland fling, on the other hand, symbolizes victory or rejoicing.

IRELAND

Ireland's dances are unique in structure, highly developed, and distinguished by the complicated rhythmic music of the feet. The keen Irish wit is intrinsic in the dances, not as obvious buffoonery, but as a series of subtle epigrams. The body is held very erect, and the interpretation is light and happy. The feet of a good Irish dancer should be like drumsticks in that he can produce the sounds of the drum with them—short, long, dull, and sharp notes. The three best known dances are the *reel*, the *jig*, and the *hornpipe*. The reel is the most classic, and it uses a clogging movement, speedy and noiseless. The jig and hornpipe use clogging and shuffling steps.

SCANDINAVIA

Dances of Scandinavia are generally very simple in step, but may be complicated in figure. For example, the *Vafva Vadna*, a Swedish dance representing a weaver with a loom, uses lines of performers to represent the stretched thread, while

a girl portraying the shuttle weaves back and forth through the lines. They are quite gay and lively, decidedly graceful, and frequently pantomimic.

FRANCE

Although we are indebted to France for court dances, such as the quadrille, and for their masterly development of the ballet, the French people have not made an outstanding contribution to folk dance. They tend to be interested and appreciative spectators, rather than active participants in dancing. The dances of the people are comparatively simple, somewhat like the celebrations of children. One of the best known is the *farandole*, which somewhat resembles "follow the leader." A chain of boys and girls united by holding handkerchiefs dance in a zigzag manner in directions indicated by the leader.

HUNGARY, POLAND, AND RUSSIA

The dancing of these three countries is similar. All three tend to be very lively

and to require leg strength because of the difficult jumps employed. In some of their dances we see definite traits of the people. Frequently a dance (the *Czardas*) will be in two parts—an *adagio* followed by *allegro*. The first is done with freedom and tranquillity and relates to the period when the women worked calmly at home, were seen little by outsiders, and occupied themselves with home affairs. The second part expresses the gaiety, carelessness, humor, and pleasantry of a simple people. Hungary and Russia are both well known for their *czardas* dance.

ITALY

The most outstanding feature of the Italian dances is their use of pantomime—all their dances tell a story. The *tarantella* is generally recognized as the national dance of Italy. Breezy and animated, the action concerns *la morra*, a game where one guesses at the number of fingers open on an opponent's suddenly outstretched hand. The steps are varied, with many tunes and graceful posturings. The *saltarello* is another fairly well-known, old and lively dance.



Fig. 14. Lithuanian Dance: "The Swallow."

ISRAEL

Israel is a young country but already its people have made tremendous progress in the development of folk dance. In contrast to the newness of Israel itself, the customs and traditions of the Jews are ancient, and their backgrounds include countries the world over. Their folk dances reflect these factors for while some of the most popular dances such as the Hora have been brought from other countries, those such as Sherle have been a part of Jewish ceremonies for centuries. Israeli dances are enjoyed not only by the people of Israel, but already are becoming increasingly popular in other countries.

COMMON STEPS IN
EUROPEAN FOLK DANCE

The reader should be familiar with the following steps and their execution.

Balance Step. Step forward with the right foot. Bring the left up to the right and rise to toes. Come down, and repeat this stepping backward. This is a three-count step, done to waltz time.

Bleking. Hop on the right foot and extend the left heel forward with toe up; hop on left foot, extending right heel forward; then hop three times in this manner (right, left, and right) in double time.

Buzz or Pivot. Use one foot as a pivot to move in a small circle. The ball of the other foot acts to push or turn the body around.

Glide Polka. This is a slide, close, slide, close, followed by a polka step.

Grapevine. Step to right with right foot. Cross left foot behind right and step on it. Step right with right foot. Cross left foot in front of right and step on it. This step can be done to the left, and has many variations.

Heel and Toe Polka. Place the left heel forward, toe up, then the left toe in back. This is followed by a polka step.

Mazurka. This is similar to the schottische but it is done in three parts, which means that most of the work is done by the same leg, and may become fatiguing if done too long. Slide forward with the left foot, bring the right foot up to it, and hop on the right foot. Continue the same step.

Pas de Bas. Leap to left side with left foot pointing toe, keeping leg straight, swinging leg well up and over. Bring right foot over in same manner. Place weight momentarily forward on ball of right foot, then back again on left. Repeat same, moving to right, leading with right foot.

Polka. This is commonly done with a hop, step together, step. It is an uneven rhythm, the hop being executed very quickly. It may be done forward, sideward, or in a circle, and is commonly performed with a partner.

Schottische. This is an even rhythm, with four parts. Slide forward with the right foot, bring the left up to it, step forward on the right, and hop. Do the same, then, starting with the left foot, and continue, alternating the leading foot.

Slide. Step together, usually done to the side either right or left, and quite fast.

Step Hop. Step forward on one foot, and then hop on the same foot. Do the same with the other foot, and continue, alternating feet.

Touch Step. Point the left toe to the ground, step forward with the left foot. Repeat this with the right foot, and so on, alternating feet. This is used in the minuet.

Two Step. The two step is very much like the polka step minus the hop. Step forward on left foot. Place right foot momentarily alongside left. Step forward again on left. Hold. Begin next series of steps moving forward on right.

Waltz. Step forward with the left foot; step forward, side with right; close left to

right. When repeated backwards, starting right, this becomes the box waltz. Three counts are even.

The following is a suggested list of European folk dances (numbers denote books listed in bibliography):

<i>Dance</i>	<i>Country and Reference</i>
Kaca	Czechoslovakia (7)
In the Green Meadow	Czechoslovakia (5)
Ace of Diamonds	Denmark (8)
Little Man in a Fix	Denmark (8)
Sailor's Hornpipe	England (2)
Farandole	France (4)
Gavotte	France (5)
Minuet	France (8)
Csebogar	Hungary (8)

Czardas	Hungary, Russia (5)
Oyda	Lithuania, Russia (7)
Donegal Round Dance	Ireland (3)
Irish Hornpipe	Ireland (5)
Irish Jig	Ireland (7)
Tarantella	Italy (5)
Sudmalinas	Latvia (7)
Kalvelis	Lithuania (7)
Circassia	Israel (1)
Hora	Israel (1)
Highland Fling	Scotland (5)
Highland Schottische	Scotland (6)
Scotch Reel	Scotland (6)
Sword Dance	Scotland (6)
Kolo	Serbia (8)
Bleking	Sweden (8)
Varsovicne	Sweden (8)
Swiss Schottische	Switzerland (5)

Social Dance

INTRODUCTION TO SOCIAL DANCE

Social or ballroom dancing is an increasingly popular activity for both young and old. Easily learned with frequent opportunities for participation, it can provide many pleasant hours of recreation.

Included here are only a few of the basic steps from which you can create various combinations.

SUGGESTIONS FOR DANCING

Body Position and Balance. Stand with the feet close together, a narrow base.

Be at ease, stand upright so your partner will not have to support you.

Tuck your hips under, keep your weight "up"—do not drag.

Walk easily without swaying hips or bouncing up and down.

Stand on your toes, get your balance, then drop your heels down but do not shift your weight back. This will give practice in learning to maintain balance.

Walking. The walk in dance is like a good natural walk. In walking forward, swing the leg from the hip, keep the knee relaxed but not stiff (do not lead with the knee), keep legs close together, transfer the weight quickly from the heel to the ball of the foot. Push off with the back foot, and skim the foot along the floor. Do not scrape it.

In walking backward, the foot leads. Reach out with the toe, leg extended, and place the weight on the toe. Let the heel drop, but do not shift the weight back.

THE SOCIAL DANCE BALLROOM POSITION

Closed Position. The man stands facing in line of direction. The lady stands quite close, directly in front of the man. Both should stand tall in good position, toes pointed directly ahead.

The man's right arm is placed around the lady's waist; his hand is usually placed directly beneath the lady's shoulder blades. Do not "clutch" partner. Keep elbows relaxed, away from the body.

The lady's left hand rests on the man's arm or shoulder. Do not "hang on for dear life." The man clasps the lady's right hand in his left, holding his arms at a comfortable distance and height.

The Open Position. Open out from the ballroom or closed position. Both dancers face in the line of direction. The man holds his partner's right hand in his left. Her left hand is on his right shoulder. His right arm encircles her waist more, moving closer to her right arm.

GOOD LEADING

Know the dance steps well. Keep in time to the music. Give signals on the step immediately preceding the step to be executed. Be firm and definite in leading. Give signals with the right arm and hand:

- (1) To move backward, the man pulls the lady forward gently, applying pressure on the shoulder blades.
- (2) To move forward, the man leads with his chest and relaxes pressure of the right hand.

- (3) To go to the right and the lady to her left, the man gently pulls to the right, lifting his right lower arm to touch her left upper arm.
- (4) To go to the left, the lady to her right, the man moves his right hand toward her left side and gently pushes.
- (5) To dip, the man lowers his right hand to the lady's waist and exerts a gentle pressure down as he pulls her slightly toward him.

FOLLOWING

Move when your partner does, not before he does. Keep your eyes on your partner's right shoulder if in doubt. Every move he makes will begin there.

ETIQUETTE

Dress correctly for the occasion. Always greet the hostess or chaperone. The man always dances the first and last dances with the lady he escorted. Never



Left: Closed.

Right: Open.

Fig. 15. Dance Position.

leave your partner stranded at the end of a dance. Take her to friends or to her next partner. The man always thanks his partner for the dance; she should tell him she enjoyed dancing with him.

At dances where "cutting in" is allowed, the man should relinquish his partner cheerfully and look for another soon. The lady should not indicate her feelings, positive or negative, concerning the change. If for some reason a lady does not want to dance with a man when couples have exchanged dances, she should "sit the dance out" with him. Do not hunt desperately for another partner.

Act with dignity and decorum at all times. If you bump into another couple on the floor, the gentleman apologizes. Do not congregate at the entrance of a dance floor to talk.

Fig. 16. Turn under the Arm.



THE FOX TROT

BACKGROUND *

The fox trot is of fairly recent origin. It is derived from the one-step, a dance done to lively 4/4 time in which a step is taken on each beat, and from the two-step, which is a regular form of the present fox trot. The fox trot gets its name from Harry Fox who danced a fast, simple trotting step to ragtime music in one of the Ziegfeld shows of 1913-1914. Mr. Oscar Duryea introduced the step to the New York night clubs, but changed the pattern so that four walking steps were alternated with eight quick running steps. All types of modern music from ragtime to the blues and swing have had an effect on the fox trot. There are really three basic tempos: fast, medium, and slow. The fox trot is done to 4/4 time, four quarter beats or their equivalent to each measure. No attempt is made here to include all the variations. Only some of the most well-known styles are described here. Directions are for the man.

Magic Step and many other variations of the fox trot are taught by Arthur Murray. Refer to his book. †

THE JITTERBUG

Jitterbug is a name given to dancing done in a very unconventional manner in which the whole body is involved in the dance. There is continual bending and straightening of the knees, turning of the partner from the closed to the open position at arm's length. The dancers move from side to side, or turn to swift circles

* Most of the material in this section was drawn from Jane Harris, Anne Pittman, and Marilyn Swenson, *Dance Awhile* (Minneapolis: Burgess Publishing Co., 1955).

† Arthur Murray, *Dance Book*, Copyright Arthur Murray, 11 East 43rd St., New York, New York.

The Fox Trot

<i>Simple Walk Forward (back)</i>	Step Pattern Beat	STEP	STEP	STEP—HOLD	
		Step forward L.	Step forward R.	Step forward L.	Step forward R.
<i>Two-Step Side</i>	Step Pattern Beat	STEP	STEP	STEP—HOLD	
		Step L side.	Close R to L. Take weight on R.	Step L side.	Close R to L. Weight remains on L.
<i>Two-Step Diagonally Forward (back)</i>	Step Pattern Beat	STEP	STEP	STEP—HOLD	
		Step diagonally forward L.	Close R to L. Take weight on R.	Step diagonally forward L.	
	Step Pattern Beat	STEP	STEP	STEP—HOLD	
		Step diagonally forward R.	Close L to R. Take weight on L.	Step diagonally forward R.	
<i>Turn Right</i>	Step Pattern Beat	STEP	STEP	STEP STEP	STEP
		Step back L, turn slowly R.	Step diagonally forward R.	Keep turning. Step L and then R.	Step back L, turning slowly R.
<i>Turn Left</i>	Step Pattern Beat	STEP	STEP	STEP STEP	STEP
		Step forward L, turn slowly L.	Step back R, keep turning.	Keep turning. Step L and then R.	Step forward L, turning slowly L.
<i>Dip</i>	Step Pattern Beat	STEP—HOLD		SLOW STEP	
		Step back L extend R leg with the toe turned out, touching floor slightly.		Step forward onto R. This is the recovery. Keep step smooth; do not leap.	
<i>Hesitation</i>	Step Pattern Beat	SLOW STEP		SWING	TOUCH
		Step forward on to L foot.		Swing R forward past L.	Touch R lightly to floor forward.

around the room. Jitterbug is a general name given to the Charleston, Black Bottom, Shag, and Big Apple. Boogie Woogie, with its unique bass rhythm is also closely

allied to the jitterbug. Jitterbug fashions change almost from year to year. The basic step is:

Step L (toe-heel) to L, closed position.

Step R (toe-heel) to R, closed position.

Step L behind R foot, open position.

Step R in place, re-close position.

THE RUMBA, TANGO, AND SAMBA*

The rumba is a Cuban dance done in fast or slow 4/4 time. The basic steps are quite simple, and are done in a square; the most difficult technique is learning the rumba movement. The upper part of the body is held erect and firm. The hip-sway

is achieved by taking short steps with the knee leading, and the proper timing in the weight shift. One steps on the flat of the foot without placing the weight on it. The entire weight of the body remains on the heel of the other foot. Each step is taken in this fashion with the weight always remaining on the heel of the opposite foot. The rhythm of the rumba steps is: slow-quick-quick, slow-quick-quick. The basic step of the rumba is given below.

Rumba

$\frac{4}{4}$ Step Pattern
Beat

STEP—HOLD

STEP

STEP

Step forward L (wt. on heel of R foot).

Step side R (wt. on heel of L foot).

Close L foot to R.

Step Pattern
Beat

STEP—HOLD

STEP

STEP

Step back R (wt. on heel of L foot).

Step L (wt. on heel of R foot).

Close R foot to L.

The tango first came to the United States via Argentina about 1914. The first steps were very sensuous, and it was not until it was re-introduced by way of France in modified form that the tango became popular. In the present tango, the knees are straight, not bent, and the rhythm quite even. The basic step takes two measures

of fox trot time and consists of two slow steps and the break. The break forms the forward half of a square and is composed of two quick steps and a slow step forming the arch.

* Most of the material in this section was drawn from Anita Peters Wright and Dexter Wright, *How to Dance* (Garden City, N.Y.: Doubleday, 1958).

Basic Tango Step

$\frac{4}{4}$ Step Pattern
Beat

SLOW

SLOW

QUICK

QUICK

QUICK—HOLD

Step forward L.

Step forward R.

Step forward L.

Step side R.

Bring L foot next to R, no weight on L, and pause.

The samba is a native dance of Brazil performed with great freedom. It has a bounce to it, is not too exacting, and is done to 4/4 time. One stands on a narrow base, bending the knees on the definite beats, straightening them between. The step point is a basic technique and is learned

by counting 1 and, 2 and, 3 and, 4 and. In moving forward and backward, the following is executed.

There are of course many variations of the rumba, tango, and samba. The reader is referred to the bibliography if he is interested in reading further about them.

Samba

	AND	1	AND	2	AND	3	AND	4
$\frac{4}{4}$ Step Pattern								
$\frac{4}{4}$ Beat								
	Bounce forward with L foot.		Step forward R to L foot.		Bounce back R.		Step back L to R foot.	
							Step R in place.	

Note: Straighten the knees on count and each time.

THE MAMBO

The mambo comes from Cuba, where it was invented in 1943. First introduced in the United States in 1949, it was slow to gain favor, but about five years later it

suddenly became extremely popular. The dance is fast, done in 4/4 time with its movements less subtle than those of the other Latin favorites. The basic step is done in social dance position, but there are many variations allowing more freedom of position and body movement. The basic step for the man is described as follows:

Mambo

	STEP	STEP	STEP—HOLD
$\frac{4}{4}$ Step Pattern			
$\frac{4}{4}$ Beat			
	Step back on R.	Step in place L.	Step forward R, bringing R foot to L and hold.
	STEP	STEP	STEP—HOLD
$\frac{4}{4}$ Step Pattern			
$\frac{4}{4}$ Beat			
	Step forward L.	Step R in place.	Step back L, bringing L foot to R and hold.

THE WALTZ

The waltz originated in Europe in the sixteenth century, and was immediately adopted in the French courts. The English were more reluctant to accept it because it was done in the closed dance position. Although many variations have been introduced from time to time, including the hop

waltz, dip waltz, lame duck, hesitation, and two-step, the basic pattern has remained the same. It is done in $\frac{3}{4}$ time, with the accent on the first beat, and consists largely of turns. The two basic kinds of waltz music are the slow waltz and the fast or Viennese waltz. When done well, the waltz should be smooth, blending perfectly with the music. Steps for the man are described as follows:

Box Waltz	3 4	Step Pattern Beat	STEP	STEP	STEP
forward			Step <i>L</i> forward.	Step side <i>R</i> .	Close <i>L</i> to <i>R</i> , weight on <i>L</i> .
backward			Step <i>R</i> backward.	Step side <i>L</i> .	Close <i>R</i> to <i>L</i> , weight on <i>R</i> .

Waltz Turns

Turn left by stepping forward left or stepping back right.

Turn right by stepping back left or forward right.

Waltz Forward	Step Pattern Beat	STEP	STEP	HOLD
		Step forward <i>L</i> .	Close <i>R</i> to <i>L</i> , rise on toes.	Lower <i>L</i> heel.
Waltz Backward	Step Pattern Beat	STEP	STEP	HOLD
		Step <i>R</i> backward.	Close <i>L</i> to <i>R</i> , rise on toes.	Lower <i>R</i> heel.
Viennese Waltz	Step Pattern Beat	STEP	STEP	STEP
		Step forward <i>L</i> .	Step side <i>R</i> .	Place <i>L</i> in front of <i>R</i> , <i>L</i> heel touching <i>R</i> toe.
	Step Pattern Beat	STEP	STEP	STEP
		Step back <i>R</i> .	Step side <i>L</i> .	Cross <i>R</i> to <i>L</i> .

CHA CHA

The cha cha is the youngest and already the most popular of the Latin American dances. Its basic steps are easily learned because the music has a definite, "easy to hear" beat. The rumba motions

are used in most cha cha steps, and practice is necessary to develop a graceful style in performing the more intricate variations. The cha cha is done in 4/4 time, and its steps can be done to the count of one, two, three, four-and. The basic step with the count is given below:

Cha Cha

4 4	Step Pattern Beat	STEP	STEP	STEP	STEP	STEP
		Step back on <i>R</i> .	Step <i>L</i> in place.	Step forward <i>R</i> bringing <i>R</i> foot to <i>L</i> Step.	Step <i>L</i> in place.	Step <i>R</i> in place.

	STEP	STEP	STEP	STEP	STEP
4 Step Pattern					
$\frac{7}{4}$ Beat					
	Step forward L.	Step R in place	Step back L bring- ing L foot to R.	Step R in place.	Step L in place.

Modern Dance

Out of the many earlier phases of dance, the modern dance of the present period emerged. It has grown out of the people, and is a means of expression in which the body is the instrument of the expression. Dance comes from the pulse and heart of the people and reflects its own times. There is complete freedom of style and form which portrays the character, personality, feelings, and emotions of the dancer.

SOME WELL-KNOWN DANCE PERSONALITIES

A number of men and women performers and teachers of the dance have made distinct contributions to this art form. Included here are only a few who have been particularly outstanding.

Isadora Duncan: Many people consider her the "Mother of Modern Dance." She took the first step into a new direction, gave freedom and content to the expression

of her body. She was the first Western dancer to dance barefooted and to appear on the stage without tights.

Martha Graham: She is one of our greatest contemporary dancers. She has toured the country with her group. For her repertoire she has chosen themes from American History, and in recent years from the Greek Classics. Her dances have an angularity and sharpness, yet stark simplicity. They show the speed, power, and vigor associated with the mechanical age of today, and are based on strong body contractions. In doing frontier works, she stresses movements that use the heavy muscles of the pelvis and trunk. Aaron Copland has done much of Martha Graham's musical composition.

John Martin: He is a noted critic, author, and authority on the dance.

Charles Weidman: Trained at the Denishawn School, he established a school and concert company with Doris Humphrey in 1927. He works best and most significantly

Fig. 17. Dance Group.





Fig. 18. The Skip.

in dance and acts as a core that her own imagination can develop and enlarge.

NATURAL EQUIPMENT NEEDED IN DANCE STUDY

Body Structure: This sets limits of movement. The body is capable of a wide range of movement and locomotor activities. Walking, running, leaping, hopping, and jumping are the basic locomotor skills that can be done in a variety of combinations. Rotational or axial movements are also possible. They include rising, falling, turning, twisting, bending, and stretching. They may involve one region of the body, such as an arm or leg, or the entire body.

Temperament: This is necessary for interpreting experiences and developing a sense of values. The awareness of all sensations as well as the capacity to think, feel, imagine, and create are basic to the performance of the dance.

ACQUIRED EQUIPMENT NEEDED IN DANCE STUDY

Qualities of Movement: The swinging movement, begun by gravity, ends in suspension. The sustained movement is smooth, even movement held under control. The percussive movement is a beating, pulsating, sharp, explosive one. Vibratory movement is produced by the utmost degree of contraction of the muscles.

Space Factors: In direction in locomotion one tries to move in all directions—forward, sideways, and backward. Movements can be set apart or phrased by changing direction before and after a specific group of movements.

Distance or Range: The range in locomotor movements can be changed by taking big or little steps in various contrasting patterns. In rotational or axial movements, the scope of movements may be increased or decreased. As this is done, more effectiveness can be gained by changing the intensity of movements, too.

Floor Pattern: This is a design made on the floor by the footsteps of the dancers. There are, of course, an unlimited number of patterns: circles, lines, diagonals, stars, figure eights, and so forth. The pattern made on the floor should correlate with the theme of the dance.

Level: This term refers to the horizontal plane in its height from the floor. A change from a low to a high level is an easy way to vary a theme. Levels can be used to show contrast when two or more people are dancing, and should point up the climax or low points in a dance theme.

Focus: This is movement, or body projection, or vision, or all three directed toward a particular point. Attention is directed toward a focal point; however, during the course of the dance the focal point may change. It is not uncommon to dance or project the body in one direction while looking in another. Focus adds a

finishing touch to the dance movement, and helps to emphasize a particular movement.

RHYTHMICAL FACTORS

Accent: The emphasis on certain beats or movements is called accent.

Cumulative Rhythm: This means that in the first measure one count is done (1/4); second measure, two counts (2/4); third measure, three counts (3/4); and fourth, four counts (4/4). The beats are increased and decreased in orderly fashion.

Resultant Rhythm: This rhythmic pattern is created by metrical accents of two different meters of the same tempo.

3/4	L—	|	L—	|	L—	|	L—	|
4/4	L—	—	|	L—	—	|	L—	—
Result	L—	—	L	L—	—	L	L—	—

Intensity: Increase or decrease of force, speed, or range of movement is known as intensity.

Meter: The regular recurring accent on beats which groups them into measures is a meter.

Tempo: The rate of speed of movement is the tempo.

Syncopation: In this, the metrical accent is sensed but the definite accent is given on the off-beats of the measure.

DANCE STRUCTURE

Rondo: ABACAD—A is a movement that appears and reappears in the dance, while B, C, and D are changes from movement A and different from it.

Canon: This corresponds to a round in singing.

Song Form: ABA—A is a definite movement, B is a departure, and A is a direct repetition of the first movement.

Theme and Variations: A theme is a movement pattern done in time and space.

The variation may be made in quality, rhythmic pattern, level, or groupings of the original theme.

GROUP RELATIONSHIPS

Duets, Trios, Quartets, Groups: These, in contrast to solos, represent efforts wherein people of varying number work together.

Antiphonal: This represents a question and an answer—group working against group.

Response: In this, one person is opposed to a group of people.

Succession: One person starts, another picks it up, then another, so that the movement flows like a wave through the entire group.

EMOTION AND MOOD

Mood is the atmosphere of a dance and is closely associated with emotion. In thinking of spring, for example, one may feel gay, lethargic, or exuberant. The movements chosen, and the spirit in which the dance is done, should convey the mood. One would not do a high vigorous skip in a dance which hopes to express a lethargic mood.

COMPOSITION

Composition in dance consists in planning and arranging movements in a logical sequence to express an idea, thought, action, or emotion. The word "theme" is sometimes used to define the underlying idea of a composition. Yet a dance theme must be expressed in certain form, just as we have to write in sentences and paragraphs. The steps in composition include those listed below.

Deciding a Theme: There are countless themes available to the dancer. They may be a study of traditional dance steps like the waltz, polka, or schottische or may be impressions received through visual stimuli, including pictures and observations. Auditory stimuli offer a wealth of material: music in the form of records, written music and drums; words spoken on or off the stage, poems or stories; and everyday sounds ranging from the cry of a bird or animal to the rhythms of a streetcar clapping along a track. Feelings, moods, or emotions may form the basis of a theme. Current topics; life at home, in the school, or in the community; and natural activities may all be sources to exploit in finding a theme.

Deciding the Group Relationship: The general placement of groups and the question of whether or not antiphonal, response, or successive movements would best convey an idea are problems to be solved. For example, successive movements can help express an idea involving a gradual increase in intensity or range. Antiphonal movement is adapted to showing contrast in a theme.

Spacing the Groups: What levels will be used? Where will the dancers move? What will be the focal point? What direction is best? These questions must be answered. Wide spacings on the floor, movement in many directions, and a variety of focal points help to express an idea that is diffused and indefinite. Other arrangements will reinforce other themes.

Types of Movements to Be Used: Should the group do leaps and skips or simple

axial movements? What quality is best—percussive, swinging, or sustained? In interpreting actions that are easily copied, care should be taken to express the movement generally and abstractly. This avoids straight imitation. One should think in terms of the general characteristics of the action then choose other movements to express it. A percussive leap, step hop, gallop, or skip, for example, will convey an idea of exuberant strength better than a swinging axial movement.

The Rhythmic Pattern: The tempo, accent, intensity, and meter must correlate with the theme. Slow languid tempos are associated more with lazy summer days than with crisp autumn weather. Two-quarter music with its lively short measures serves a different purpose than the longer 6/8 bar. Resultant rhythm may help to give a unity to a theme parts of which are in two separate meters. Syncopation helps to create a mood. What is the best for your theme?

The Dance Structure: Once the above considerations have been met, the general structure of the dance must be planned. Canons, rondos, song forms—each helps to give an idea of diversity, unity, contrast, or whatever is desired. Simple construction that has a sound introduction and ending and builds rapidly to a definite climax should be chosen. Repetition and the use of total body movements all help to leave a definite thought in the minds of the audience. Extraneous movements, levels, or rhythmic patterns are distracting. Above all else, choose themes that you know, enjoy, appreciate, and understand.

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Sportsmanship

In our modern day of competition, there seems to have entered a cold factor of practicality—nothing is important but winning. We seem to have lost those spiritual or ideal values which colored the early days of competition when "The Palm" meant something. It is true that we all desire perfection and to this end we strive. How often have we not played better in defeat than in victory? Can any of us truthfully deny that the satisfaction of playing well has not tempered the disappointment of defeat?

Sportsmanship is an integral part of all sports. In the code of sportsmen, victory through an unfair advantage is no victory at all. Looking through the annals of sporting events, we see that some of the most glorious sports' victories have been won in defeat. True, only the names of the winners are inscribed on the plaques and cups, yet, the ones who provide the "color" are those who attained the limelight for a few fleeting seconds, or those who made gallant though futile rallies. They are classed as "The Great" who have emerged from a defeat with a smile that covers a resolute determination to do even better the next time.

We cannot all be winners, but each of us has a definite contribution to make to the victory. Just as competition is necessary to keep us on our toes in any phase of life, so the "will to win" must exist, exceeded only by a determination to play fairly. Whether it be with ourselves or others, in any form of competition, our only purpose should be to do the very best we can. Whether it be in the field of business, sport, or daily living, we must be careful that we do not make the results of our efforts more important than the means by which we attain our ends.

Sportsmanship is not something that we can teach in the classroom. It is a way of life. Perhaps we have stressed it only on the athletic field and have ignored it in the grandstands. Why else should it be necessary to suspend events because of the demonstrations of the spectators? Have we become so blind to the quality of a performance that we see only what we want to see, and ignore the fine play of the opposition? Have we become so bigoted that we judge a man's performance by the color of his skin, the church of his choice, or the birthplace of his parents?

Why is it that once we take our seat along the 50-yard line or opposite third base, we forget the little niceties that govern our behavior on the tennis court or hockey field? Why is it that paying the price of a reserved seat seems to relieve us of the responsibility of good manners? Is it not time that we, the spectators, respect the decision of the referee or umpire, and acknowledge that here is a man who bases his judgment on rules and not on personal preference or bias? Is it not time that we started making our own decisions and acting on the basis of principles instead of on what "people will think"? We all know that they will think what they please; but

we can retain our self-respect only in the knowledge that we did what we felt was right.

The examples of poor sportsmanship at our public events are all evidences of mob hysteria. Yet if someone accused us of being carried along with the crowd, we would be insulted. But, is not that the case? Are demonstrations ever effectively carried out by one person? And what is the reply of anyone questioned about his participation in such a display—"I guess I was just carried away by it all!" If an individual can be "carried away" by a mere athletic event, what can we expect his reaction to be in a time of real tension such as our world faces today? Sportsmanship is the only antidote for emotionalism.

Sportsmanship is a topic on which much has been written and will be written. Yet, among the many definitions that I recall, the one that remains utmost in my mind is this: "Sportsmanship is character in its most gracious and courageous form."

—*Claire Doran Stanek* •

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CHAPTER EIGHT

Archery

HISTORY

The origin of archery is lost far back beyond the records of history. The discovery of this art by prehistoric man surely changed his whole life—from one of fear and threat to one of safety and security. For literally ages, the bow and arrow were the main weapons of warfare with the bow passing through the stages of short bow, cross-bow, and the English long bow, the forerunner of modern bows. During the periods of its great use as a weapon, archery also ranked high in popularity as a pastime.

Although every country of the world, except New Guinea, shows use of the bow, England has mastered this art. As early as 1545, Roger Ascham, one-time tutor to Elizabeth and highly skillful in archery, gave great impetus to the sport. His book, *Toxophilus*, is a classic in English literature, and even today can be used to teach beginning archers. In 1844, the first championships were held in York under the sponsorship of the "Great National" ruling body of archery. A few years later, Horace A. Ford, one of the greatest archers of the world, surpassed all scores of his time and developed many scientific aspects of the sport.

The history of archery in the United States follows that of England. Two very young men popularized archery shortly after the Civil War. Maurice Thompson, a wounded Confederate soldier, was advised to live an outdoor life. His brother, Will, joined him, and both spent much time in Florida hunting. As neither was allowed firearms because of the recent belligerency in the war, they developed the use of bow and arrow and gave

great popularity to the sport. Both were eloquent in speech and writing as well as in archery. Maurice published *The Witchery of Archery*, an American literary classic, in praise of archery. This was followed later by his well known novel *Alice of Old Vincennes*.

The National Archery Association was founded in 1879 and has insured archery's growth and permanence. Many local archery clubs have been organized, and competition in tournaments is nationwide and international in nature. In 1930, a small group of Californians took to the fields to hunt small game, thus developing a new style of shooting techniques. Much of the recent growth in the United States has been in field archery and bow hunting. The National Field Archery Association, founded in 1939, is this sport's governing body.

The scope of archery itself is amazing; it draws enthusiasts to target shooting, field archery, clout shooting, archery golf, tackle construction, technological research, photography, and public relations. And many men have done remarkable things in every phase. Throughout this sport there is fascination and relaxation, skill and exhilaration, concentration and achievement. You, too, can be "bewitched"!

THE SPORT

Archery today has two main classifications. The first, target and tournament shooting, consists of shooting at targets from each of several distances on a shooting green or range, or indoors. Every year more schools and colleges are adding this type to their physical education or recreation programs.

The second type, field archery and bow hunting, involves an up-to-date version of an old archery game called "roving," in which archers took to the open country selecting various targets as they moved

along. Field archery serves as a preparation for the bow hunter who must rely upon skill and woods ability. He must also change his method of aiming and shooting to be effective quickly in rough country, at varying distances, and in unusual weather. Most states have legalized bow hunting; and conservationists welcome these hunters who kill fewer animals, act with thoughtful caution, and never leave wounded game. It is even sporting to have a clean miss!

Archery equipment has kept pace with the development of target and field archery. Bows are of wood, steel, aluminum, glass, or plastic, and arrows are beautifully matched in wood, metal, or glass.

SELECTION OF TACKLE

One of the first things one must know in order to enjoy archery is how to select the proper tackle. Here are some pointers to help you make the correct choice of equipment.

Bows. The modern flat bow has been very popular. It is constructed to mathematical formula and has a rectangular cross section. It is usually so short a bow that, at full draw, the angle of the string pinches the fingers. The "long" bow is constructed longer and eliminates bulk between the belly and back; it is thus light and comfortable to use. The standard or straight center bow is straight when unstrung or may curve toward the belly; the reflexed bow has limbs which tend to curve toward the back of the bow; the recurved bow has ends which curve toward the back. The last two provide greater tension when strung. Bow strings may be linen or synthetic thread—usually dacron or fortisan, but not nylon which tends to stretch.

Bows come in lengths of four-and-one-half to six feet, ranging in weight from sixteen to thirty pounds for college women.

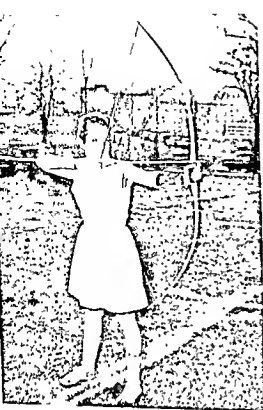


Fig. 19. The Full Draw.

The weight is marked on the upper limb of the bow and is determined by the pounds required to pull the bow to a full draw. Begin with a sixteen or eighteen pound bow and gradually work up to a heavier bow. If you are taller than average, select a five-and-one-half or six-foot bow. To brace or bend the bow for shooting, hold the handle in the left hand, place the back of the lower limb against the inside of the left foot, place the right hand on the back of the upper limb. Pull with the left hand, push with the right, and as the bow bends place the upper loop in the bow nock.

Arrows. Arrows are made in lengths of twenty-two to thirty inches. To measure the proper length for yourself, hold the arrow between forward stretched arms with nock against the breastbone. Pile should come to the end of the fingers. Select a set of six arrows with like crests.

Arm Guard and Finger Tab. A leather

cuff should protect the wrist of the bow arm from the occasional slap of the string. Necessary for the protection of the first three fingers of the drawing hand is a tab of leather or a smooth leather glove.

Quiver. The receptacle for holding arrows may be of cloth or leather and can be carried at the belt, pocket, or shoulder. The metal ground quiver prevents breakage on the ground and will hold arrows in convenient reach.

Target. The regulation target or matte consists of a straw base or backing and a face of oil cloth or canvas. The face is a circle 48 inches in diameter with a center circle, the "gold," 9 $\frac{3}{8}$ inches in diameter. Four concentric rings, each 4 $\frac{1}{2}$ inches wide, are, in order from the center, red, blue, black, and white. The white space outside the scoring surface is the "petticoat"; the part enclosing the target and tied with a drawstring in the back is the "skirt".

SHOOTING FORM

Now that you are fully equipped you are ready to shoot. Here are seven points of shooting form that should be observed every time you send an arrow toward the target.

Stance. Stand with your left side toward the target, feet comfortably apart and astride the shooting line.

Nock. Hold the bow in your left hand with the top of the hand even with the top of the handle. Draw the arrow from the quiver with the thumb and forefinger of the right hand; turning the bow in a horizontal position, place the arrow over the bow allowing the shaft to rest on the shelf of the left hand. The nock end should be inserted on the bow string at right angles to the string, with the cock feather away from the bow.

Draw. Hook the three shooting fingers (approximately the first joint) on the

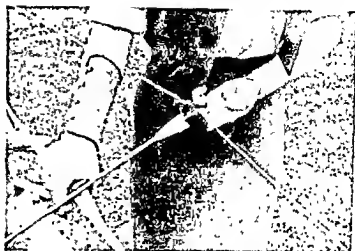


Fig. 20. The Three Shooting Fingers.

string, the arrow fitting loosely between the first and second fingers. Take a short draw to check on nocking. Turn the bow to a vertical position and, while extending arm toward target, turn your head to the left, and draw the right elbow straight back parallel with the arrow. Draw the string to the center of the chin and nose, the pile

resting on the shelf. Keep your bow hand loose and bow arm rotated downward and outward to prevent the string from slapping the left elbow bulge.

Anchor. Anchor the right forefinger under the right side of the jaw. Continually pull the string back to the center of your chin, and hold the pile on the knuckle shelf to prevent its creeping forward.

Aim. Close the left eye, and, with the right eye, sight between the string and bow to the arrow point. Two methods of aiming are useful in target shooting and both enable the archer to make allowances for the trajectory of the arrow in flight. In the point-of-aim method, the arrow is directed at an object or spot on the ground, target, or above the target in order to hit the gold. Place a block of wood or marker in front of the target for an aiming point. At short range the point-of-aim will be on the ground or below the gold; at long range, it will be above the gold; and at the one point where the point-of-aim and gold coincide will be point blank range.

In the second method, a sight is used. This is a mechanical device, on the bow, above the handle, which can be lined up with the gold. It is adjusted upward at short range; downward at long range. In using the sight, the eye looks through the

Fig. 21. The Anchor.



sight and to the gold of the target. Do not lose sight of the arrow point in this method—prevent overdrawing. Always draw the full distance so that the power driving the arrow will be the same for every shot.

The instinctive method of shooting uses no sight or aim. See description of the special technique to perfect this natural method of shooting in field archery.

Release. Roll the fingers off the string, and let the right hand ride back along the neck, the right shoulder blade pulling back into its place.

Hold. Hold the loosing position until the arrow hits. This is often called the "follow through" or "afterthought." Think over your shot.



Fig. 22. Drawing Arrows from the Target.

COMMON FAULTS IN FORM

If the arrows are going consistently off in one direction, check for these errors:

<i>Arrow Direction</i>	<i>Error in Form</i>
Too high	Point of aim Peeking—looking up too soon
To the right	Creeping—allowing drawing hand to drift forward instead of anchoring
To the left	Hunching left shoulder Leaning away Sighting with left eye
Too low	Point of aim Dropping bow arm Anchor on side of face Creeping
Off bow hand	Pinching or squeezing arrow

Field archers have developed quite different shooting procedures. These may be described briefly as—

1. Nocking point for arrow—it may be a knot of waxed thread—is placed on bow string for quickly nocking arrow exactly.

2. In drawing, the string is anchored along the side of the face while tilting the head slightly toward the string and inclining the bow slightly.
3. Bow arm is kept straight and firm—a full draw is made on all shots.
4. Both eyes are open for "instinctive aiming."

SCORING

When you have shot six arrows consecutively this constitutes an "end." A "perfect" end is one in which all six arrows hit the gold. Shooting a given number of ends from more than one given distance is a round—the greatest distance is shot first and no practice ends are allowed after starting the round. An arrow leaving the bow is considered shot unless you can reach it with your bow. Be sure to remain behind the shooting line until given the signal for all to retrieve arrows. If your arrow hits and dangles, stop the shooting, and run down to insert it. An arrow passing through the target or hitting the target and rebounding scores 7 points. Retrieve it and insert it in the red after line hits on the face have been checked. The count is 9, 7, 5, 3, 1 from the center. Cutting through two colors scores the higher color.

GLOSSARY OF TERMS

Archery Golf: Shooting on a regular golf course with bow and arrow, using a small target of some kind on the green in place of the cup.

Arrow rest: Ledge set on side of the bow handle on which arrow rests during draw.

Beeswax: Wax used to rub on bow string to prevent strands of string from raveling.

Belly: The inner, rounded side of the bow.

Birch: Wood used in making common inexpensive practice arrows.

Bowyer: Maker of bows.

Bracing or bending: Act of bending bow for use by inserting string in bow nock.

Clout shooting: Shooting high in air (bow arm at forty-five-degree angle) so that arrows fall onto forty-eight-foot target marked out on ground—minimum range, one hundred and twenty yards.

Cock feather: Feather placed at right angles to arrow nock and distinguished from the two drab feathers by its odd color.

Composite bow: A bow made up of more than one substance. Usually back and belly are of fiberglass or plastic.

Crest: Combination of colored rings on arrow to identify its set and at the same time to make it easier to spot the arrow on ground or in the target.

End: Shooting of six arrows at one time.

Fistmele: A measure of the correct distance (six inches) between the bow handle and string made by placing the fist against the handle with open thumb extended toward the string.

Fletching: Feathers on arrow, the slight curvature of the vanes rotating the arrow and driving it on a true course in flight.

Footed: Insertion of hard wood at the pile

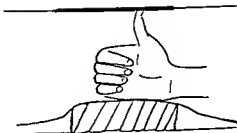


Fig. 24. Fistmele.

end of arrow shaft to insure greater strength.

Instinctive aim: Method of aim in which no sight or point-of-aim is used.

Lady Paramount: Presiding official at ladies' shooting line.

Laminated: A composite bow usually made of wood.

Lemonwood: A hard lemon-yellow wood found in Cuba and Central America—one of the most popular of the bow woods.

Limb: Upper and lower parts of the bow; the former is longer and is identified by printing of bow weight and bow-string loop for the nock.

Nock: Groove at the end of the arrow and at each end of the bow to hold bow-string.

Osage: A hardwood of this country well suited for bow making.

Overdraw: Dangerous practice of drawing the arrow back too far, so that tip passes the belly of the bow.

Petticoat: Part of the target face extending beyond the scoring surface—best to include a drawstring to make face secure around target.

Pile: Metal point of arrow—more durable than wood.

Point blank range: Point-of-aim and center of target coincide.

Point-of-aim: Method of hitting target by indirect sighting—used by a great many shooters.

Point-of-aim marker: Object aimed at in order to hit target.

Port Orford cedar: Lightweight fine wood from the West Coast used for arrows.

Quiver: A holder for arrows—may be of leather or cloth and worn on belt or may be constructed of wire or other metal and inserted in the ground.

Range: Field for shooting, preferably running north and south with shooting line marked and targets at twenty, thirty, forty, fifty, sixty yards.

Round: Several ends shot at one time or the standardized event for tournaments as the "Columbia Round."

Scoring: A target captain at each target records after each end as the assistant draws arrows from target and announces points. The values of the colors are 9, 7, 5, 3, and 1 points from the center outward. An arrow rebounding scores 7 points; one penetrating the target far enough to hide the nock scores 5 points; one cutting two colors scores the higher value.

Self: Bow or arrow made all in one piece.

Serving: Reinforcement of center portion of bowstring to protect it from wear of arrow and shooting fingers.

Shaft: Long portion of arrow.

Shelf: First finger knuckle of bow hand upon which arrow rests when drawing. May also refer to the slightly thicker portion of the serving to which arrow nock securely fits.

Shooting line: Line marking various distances from targets. Archer stands astride line.

Sight: Mechanical indicator, attached to the bow just above the bow handle, which can be adjusted so that by having it in alignment with the gold the arrow will hit the target.

Snaked arrow: Arrow buried under grass—draw it forward to retrieve it.

Stringing the bow: Fitting the bow with new string. Also may refer to bending the bow.

Tassel: A piece of fabric or wool tassel to clean arrows which become wet or soiled.

Timber hitch: A knot for fastening loose end of bowstring into nock of lower limb.



Fig. 25. Timber Hitch.

Tips: Horn, fiber, or aluminum tips that ornament the bow, protect its ends, and are nocked for the string.

Toe markers: Small stick stuck in the ground at the left toe to indicate one's starting position.

Tournaments: Standardized target events for competitive purposes. Examples of some approved by National Archery Association:

Arrows at Yards

Columbia	24	50
Round for	24	40
Women	24	30
American	30	60
Round for	30	50
Men and	30	40
Women		
Team Round	96	50
for Women		
Clout Shoot	36	140 (Class A)
for Women	36	120 (Class B)

Toxophilite: A student or lover of archery.

Trajectory: The path of the arrow in flight.

Yew: Considered the perfect wood for bows—found in southern Europe, and now in Washington and Oregon.

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CHAPTER NINE

Badminton

HISTORY

Badminton is traceable to India, but its name comes from England—pointedly from Badminton, the country estate of the Duke of Beaufort. It was introduced in New York in 1878 by two gentlemen, Bayard Clark and El Langden Wilks.

The first real American impetus came with the return of soldiers from World War I. Officers became acquainted with the game in England and brought it home to Canada and the United States. The Canadian Badminton Association was founded in 1921, and the American Badminton Association in 1936. In Canada the churches provided much of the playing space, thus further stimulating its growth, whereas in the United States, the schools took over this function.

THE GAME

Badminton is a game which is suited to all degrees of skill, to all ages, and to both sexes. It is played both indoors and out on a hard or grassy-surfaced court which is divided by a net five feet high across the center. The players—one on each side in singles, a team of two players on each side in doubles—serve and rally a feathered or plastic shuttlecock across this net. The object of the game is to hit the bird in such fashion that the opponents are unable to return it before it hits the ground. A good game

of badminton varies fast, hard-hit drives with quick drop shots, thus requiring skill, agility, and quick thinking.

Badminton clubs have been organized throughout the country, where groups of adults meet to learn and play the game, and participate in tournaments. Badminton is becoming one of the most popular individual sports both in physical education and recreation. It is an ideal co-recreational sport, and one which can be learned now and enjoyed for a lifetime.

Fig. 26. Badminton Court.

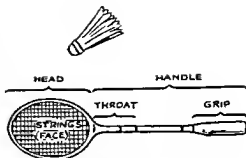
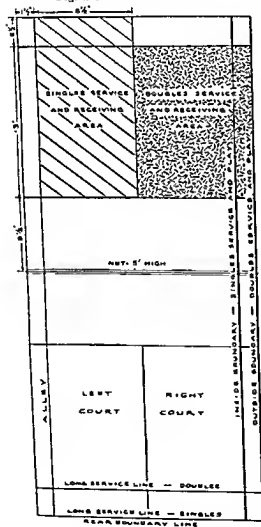


Fig. 27. Shuttlecock and Racket.

EQUIPMENT

Court. The court is divided as shown in Figure 26.

Care should be taken to keep the surface of the court even, and to avoid a slippery surface. The safety of the players will depend upon the condition of the court.

Net. The net is of light cord, fairly delicate, and requires proper treatment to prolong its use.

Racket. The badminton racket has a light wood or aluminum frame. The strings are fine, usually of silk or nylon. The racket is fragile, and should be used only to hit the shuttlecock. When the racket is not in use, keep it in a press to avoid warping.

Shuttlecock. Shuttlecocks are made in two weights: light for indoor play and slightly heavier for outdoor play—either type may be used. The official shuttlecock has a cup-shaped cork base with feathers inserted into it around the lip-edge. A plastic shuttlecock is now made, similar in weight and flight to the standard cork and feather type, but more practical for general use. It will withstand rougher use than the older type, but both require the following care for lasting wear: (1) insertion and removal of the tip first from the container; (2) keeping extra birds out from underfoot, while playing; and (3) storing in containers in a cool place.

TECHNIQUES

GRIPS

Forehand. The racket is held at the extreme end of the handle. To obtain the correct grip, hold the racket in a vertical position so that the stringed area is at right angles to the floor. Grasp the racket as though you were shaking hands with it. The index finger and thumb, after taking the grip, should form a large V or open wedge on top of the handle. The other fingers will naturally curve around the racket. Avoid the following mistakes: (1) placing the thumb on the top of the racket; (2) separating the index finger from the others; and (3) locking the wrist.

Of utmost importance in badminton is the maintenance of the greatest degree of wrist flexibility. This grip is used for all forehand strokes and for the service.

Backhand. An alternate grip is used by some players for backhand strokes. For the backhand grip, loosen the grasp of the racket hand, rotate the racket head one-quarter turn clockwise from the forehand grip position. The thumb flattens out and moves up to the topmost flat section of the handle, lessening the angle between it and the index finger. Now tighten the grip, the other fingers curving around the handle.

There are certain advantages to using this grip for backhand strokes:

1. This position of the thumb gives additional strength.
2. Additional power and longer reach are gained.
3. There is no restriction of wrist flexibility.

FOOTWORK

The strokes of a badminton game using only the arms, hands, and racket would be

difficult to perform and would be ineffective. The entire body must contribute to effect the best type of play. Effective movement on the court requires proper footwork. The following qualities contribute toward good footwork:

1. Moving quickly and easily into position.
2. Maintaining body balance and control.
3. Correct running (weight forward, push off from the toes), ability to shift weight and change directions quickly.
4. Proper stance (movement and position of feet during the actual stroke). The ready position calls for weight on the balls of the feet, one foot slightly forward, knees relaxed, racket (held with the handle in the right hand) parallel to floor, left hand under the throat, and racket head pointing toward the opponent. This position should be assumed while waiting to receive a serve, and after each stroke is completed, if time permits.

Forehand, backhand, and service footwork are to be considered in the explanation of each stroke.

STROKES

Service

The service is the act of putting the bird into play at the beginning of the game and after each point. The flight of the bird in service may be short and low or long and high, using the underhand stroke, or hard driven, using a low side-arm stroke. In all three types the shuttle may be hit "out of the hand," or tossed and hit while in the air. The out-of-the-hand service is easier and more accurate for beginners, because it requires less coordination.

In both types of serves the stance and footwork are the same. Stand facing the right side line of the court, either right or left foot forward, with the left shoulder facing the net. Your weight may be on either foot, because not much transfer of weight

is needed. Once the stance is assumed, however, the feet may not be moved until the service stroke has been completed.

In serving the bird out of the hand, hold the bird lightly, by the extreme tip of the feathers, between the index finger and thumb. The bird hangs perpendicularly to the floor. The bird may not be hit above the waist or racket hand in service. Keep your eyes on the bird, and adjust the bird to the racket face. Take a few practice swings to make sure that the racket and the bird are going to meet. Backswing and stroking are entirely from the wrist. Swing easily, and then "flick" the bird suddenly. Avoid the following mistakes: (1) allowing the legs to be too stiff; (2) keeping the bird too close to the racket handle; (3) moving the whole arm; and (4) holding too much of the feathers in the fingertips.

In the "toss" serve, hold the bird nose down by the cork, between the thumb and index finger. Toss the bird into the air so that it will fall during the backswing. Swing the arm back, cocking the wrist. Swing the arm and racket forward, snapping the wrist forward just before the racket contacts the bird. This type of serve is harder to control because the full arm swing and wrist action produce a harder hit and a longer, more powerful flight of the bird. Avoid the following mistakes: (1) using a straight wrist on the backswing; (2) snapping the wrist too early in the forward swing; (3) tossing the bird after the backswing has begun; and (4) hitting the bird above the waist or racket-hand wrist level.

Drives

1. *Forehand.* With the left foot forward, weight on right foot and left shoulder facing the net, draw the right arm straight back, cocking the wrist. Swing the racket forward, parallel to the floor, reaching out away from the body. Transfer the body weight to the left foot, and snap the wrist forward just before it contacts the bird at

a point opposite the left foot. Follow through with the arm swing to add speed to the shot. This shot should be fast, low over the net, and travel deep into the opponent's court.

2. *Backhand.* The backhand drive is similar to the forehand except that it is executed on the left side of the body with the back of the right shoulder facing the net.

Overhead

1. *High Clear.* This is a stroke in which the bird is hit over the head, and travels high, falling deep in the opponent's court. Use the forehand grip and stance. The swing begins with the arm in back, elbow bent, and wrist cocked. As the bird approaches, the arm straightens out overhead, the transfer of weight is made to the left foot, the wrist is snapped, and the bird is hit with body and arm fully stretched.

2. *Smash.* This is an overhead shot in which the bird is forcibly hit down into the opponent's court. To be most effective the smash should be executed from a position near the net. The footwork is the same as in the forehand drive; the backswing like that of the high clear. As the racket face contacts the bird the wrist is snapped forcibly down, determining the course of the shuttle's flight. Follow through with the arm swing. In directing the flight of the shuttle, aim at the short service lines, the place where your opponent is not, or directly at your opponent's wrist. Remember the smash is a powerful stroke and if not directed downward, will go out of bounds.

3. *Drop Shot.* A shot that will cause the bird to fall to the ground immediately after crossing the net is a drop shot. The overhead drop shot stance and backswing are the same as for the smash and high clear, but at the point of contact the motion of the arm is suddenly reduced with little follow-through. The bird may be said to rebound from the racket and fall across the net. (An underhand drop shot resembling

the overhead drop in flight of the bird may be used; the service stroke and stance are used, the swing is that of the serve but stops at the point of contact with no follow-through.)

4. *Round-the-Head Shot*. This is an overhead shot taken on the left side of the body with a forehand stroke, and it is generally considered stronger than a backhand drive. The grip and stance are that of the forehand drive; the backswing is high with the elbow bent and the racket behind the head. Swing forcibly forward and follow through. Be sure to keep the racket arm overhead so that a full swing can be taken.

Net Shots

Net shots include all those strokes that occur in the vicinity of the net. Two of the most common of these have already been discussed—the smash and the overhead drop. The lift strokes will be discussed here: the hairpin net flight and the cross-court net flight. Both are characterized by a very slight swing of the racket producing a short easy flight of the bird. Both are underhand strokes, and both may be called drop shots, for as soon as the bird clears the net it should fall.

1. *Hairpin Net Flight*. Its name is derived from the course of its flight, directly over the net from one side to the other. The stance varies according to position, the player, and to whether or not the stroke is forehand or backhand. In the forehand, hold the racket open-face, draw it downward, then with a flick of the wrist and lift of the arm direct the shuttle up and over the net. There is little or no follow-through. For backhand strokes, the only change is to hold the racket in a closed-face position. In both forehand and backhand the bird should be hit at a full reach from the body.

2. *Cross-Court Net Flight*. This is the same as the hairpin net flight, except that the flight of the bird is directed diagonally across the net toward either side line.

STRATEGY

Strategy is the quality that separates the good player from the mediocre one. Perfection of skills will make your shots work perfectly, but your brain work will put them together into a winning combination. The strategy you use is the part of the game which is yours; it separates your game of badminton from all others. There are a few fundamental tactics that have proved successful for others. Some of these are listed below. Keep them in mind, even while practicing your strokes, then go on, formulate some of your own, use them, and win! A few helpful playing hints follow:

1. When playing singles, serve from a spot about three feet behind the short service line and near the center of the court. Return to this spot after each shot. From this position, using the ready position mentioned before, you should be able to get quickly and easily to any part of the court to return a shot.

2. In doubles, try occasionally to serve from the alley up near the short service line. Use either the short service, diagonally across to the opponent's alley, or the long service, driving her to the back corner of her court.

3. Vary short and long services so that your opponent will not know where to expect your services. The longer serve puts your opponent on the defensive, because she must go deep into her own court to return it.

4. Vary the pattern of your shots during a rally:

- (a) Short, long, short, long, short, short.
- (b) Long, long, long, short.
- (c) To opponent's backhand, forehand, backhand, backhand.
- (d) To right court, left court, left court, left court.

5. If possible, return a smash with a

drop shot to the opposite side of the court. The sudden change of pace often throws the opponent off balance.

6. If you have one or two particularly good shots, do not overuse them, but wait for an opportunity when your opponent cannot possibly return them.

7. Remember the old badminton saying, "Keep your eyes on the bird and your feet on the floor." Many wood shots occur because the player unthinkingly takes her eyes off the bird just before hitting it or jumps into the air in an overanxious attempt to smash.

8. Watch for your opponent's weaknesses; when you discover them, play to them. Direct your best shots at her weak spots. Do not use them often enough to give her a chance to figure out a good defense against them.

The reader should think of some suggestions to add to the above list.

DOUBLES TEAM WORK

In a doubles game, one of the most important decisions concerning strategy is the division of responsibility between partners for certain areas of the court. This should be decided before the game, and is most easily worked out between partners who have played together previously. There are four methods most generally used; each has its advantages and its weaknesses. Try all four with your partners; see which method works best for you.

SIDE BY SIDE

The court is divided lengthwise from the net to the back boundary line, each player being responsible for her half of the court and the player in the left court taking all shots along the center line. This method gives each girl practice in all types of shots,

but at the same time leaves the front and back of the court vulnerable.

UP AND BACK

The court is divided in half crossways, with the forward player being responsible for all shots to forecourt, and the back player taking the deep shots and also backing up the forward player. In this method, a rushing attack is facilitated, but the boundary lines are not well covered.

DIAGONAL

Divide the court diagonally so that each girl is responsible for all shots in her half of the court. This method gives partners who know each other's games a chance to allow for faults and lacks, but because of the indefinite line of division this setup leaves the center of the court vulnerable.

ROTATION

A combination of all the other forms of team play. There is no line of division in rotation. Partners begin playing side by side and continue until one player is drawn out of position. Her partner then moves to cover the open portion of the court. Players remain in these new places until one player is again forced to change. Again the partner moves to cover the open area. Both continue to move in a circular pattern in the direction of the original move. Players return those shots toward which they are moving. This method gives excellent opportunities for rushing the net, and at the same time confuses the opponents by the continual change of position. It should be used by players who know each other's games, and who are adept at all types of shots.

In your own play, what points of general

strategy can you depict? List or diagram a few under the headings "vulnerable situations" and "offensive tactics." Which stroke have you found most effective against the following shots: the short service, the drive, the high clear, net shots, and the smash? List any combinations of strokes or placements which you have found to be especially effective offensively.

RULES AND SCORING FOR SINGLES

1. The singles court is long and narrow, with the back line also acting as the service line.

2. To start the game, spin the racket and guess whether the smooth or rough side of the trim turns up. The player winning the spin has her choice of ends of the court or of the service.

3. Play always starts from the right hand side of the court. The receiver stands diagonally opposite. Both the server and the receiver must be within their respective service courts at the time of service. Standing on the line is out.

4. Only the server scores points, and she serves as long as she continues to score. On a *let* serve, the serve is taken over. After each point scored the server changes sides of her court to serve again.

5. The loss of a serve is referred to as a "down" or a "hand." This means that the

server has erred, and the service goes to the opponent, *no points being made for either side at that time*. The opponent serves from the right-hand court, also. The player serving is said to be "in service." She must stand within the service court during the serve.

6. A player errs when (a) her serve lands outside of the service court; (b) she fails to return a bird which is legally hit to her; (c) she touches the net with the racket or with any part of her body; (d) she serves with her racket above the level of her waist or racket hand; (e) she hits the shuttle with the frame or handle of her racket; (f) she hits the bird before it has crossed the net; (g) she allows the bird to touch her clothes or person during the rally; or (h) she hits the bird twice before it crosses the net.

7. Each point counts 1. If the server has an even score, she will serve from the right-hand court. If her score is odd, she will serve from the left-hand court.

8. The "game" is 11 points for women's singles. If a score is tied at 9 points, the player first reaching 9 may "set" the game to 3 points. "Setting" the game this way means that the players start over again to play for 3 points, with the player "in service" retaining his serve. "Setting" is optional. A score tied at 10 points may be similarly set to 2 points.

9. The server's score is called first.

10. Birds falling on lines are good.

Fig. 28. Badminton Score Sheet.

PLAYERS NAMES	POSITION	RUNNING SCORE	SET TO	FINAL SCORE
Mary Jones		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		11
Julia Gordon		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		3
Julia Gordon		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		1
Mary Jones		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		3
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		

FIG. 28A

11. The bird must be distinctly hit, not "thrown."

RULES AND SCORING FOR DOUBLES

1. The service area for doubles is between the outside or wide lines on the sides, and the short or inner boundary at the rear of the court. *Except* for the serve, the back boundary line is the long line at the rear of the court.

2. *Except in the first inning*, the serve passes to the partner after the first down, so that each side has two downs. In the first inning, only *one* down is allowed. Therefore, it is a disadvantage to serve first in doubles.

3. The first service of any inning in doubles is from the right half-court. When a point is made, the server changes courts before his next serve. Receivers do not change courts at this time. Therefore, receiving of the serve alternates, from one receiver to the other.

4. After one down of an inning, the server's partner starts to serve from the alternate half-court, as though the original server had continued.

5. When a player is serving or receiving in his original court (the one in which he started the game), his side should have an even number of points. If he is in the other court, his side should have an odd number of points.

6. The "game" in doubles is 15 points. It may be "set" to 5 points with a tie at 13; to 3 points with a tie at 14.

7. Other singles rules apply to doubles.

Tournament or Match Play. An official match consists of the best two out of three games. Opponents change ends at the start of each new game. Fifteen points is the established "game" score for all except women's singles.

GAME ETIQUETTE

Badminton is a game for ladies and gentlemen. It is wise to remember that to a really good player courtesy is as important as skill on the playing court. Keep in mind the following courtesies:

1. Compliment your opponent's and partner's good shots. Never tease or ridicule mistakes.

2. Give your opponent the benefit of the doubt if you are unsure of the landing place of the bird. Call the point in your opponent's favor.

3. Be gracious and quiet about your own mistakes. Excuses or displays of temper do not take the place of good play.

4. Call your own "wood shots" and net faults.

GLOSSARY OF TERMS

Ace: One point.

Back court: Area between the two back boundary lines and immediately in front of this.

Backhand stroke: Stroke used in returning a bird from the left side of body.

Cross-court net flight: A flight in which the bird is directed along and close to the net-tape, falling in or near the alley.

Diagonal teamwork: Division of responsibility according to a line drawn from the back right-hand corner of the court to the intersection of the side boundary line and the net (left side). One player assumes responsibility for the front triangle, the other for the back triangle.

Down: A player's turn of service.

Drive: A fast flight, parallel or nearly so to the floor.

Driven clear: A flight directed over the op-

ponent's head and out of his immediate reach, toward the back court, but with less height than the high clear.

Drop: A rapidly descending flight, directed close to the net. May be underhand or overhead drop.

Face of racket: The oval, stringed area.

Forehand stroke: Stroke used in returning a bird from the right side of the body.

Game bird: The service, which, if resulting in or followed by a point for the server, wins the game.

Hairpin net flight: A short flight made from close to the net. Ideally, the bird should cross close to the net-tape and fall close to the other side of the net.

High clear: A rapidly ascending flight, the bird being directed high overhead and falling in the back court.

Inning: A side's turn at serving.

Kill return (or shot): The shot or placement that makes a return impossible under the circumstances.

Let: Permitting the serve to be taken over, occasioned by the bird being served so that it hits the net-tape but falls within the proper service court, or by an unforeseen or accidental hindrance coming in the way of a player.

Lift stroke: A stroke used in returning the bird from close to and directly over the net. "Lift" describes the racket movement, but a distinct hit is produced.

Locked (or humped) wrist: Inflexible wrist resulting from racket handle being held parallel with the forearm, or pointed down.

Long, high serve: Refers to flight of serve that is long and high, directed to the back court; used more in singles than in doubles.

Overhead stroke: Stroke used in returning a bird from an overhead point. Ideally, a stance should be assumed and the stroke timed so as to contact the bird

a little out in front, not directly overhead.

Pop-up: A slow, high flight, the bird falling short or close to the net. Pop-ups are the result of a faulty technique; they are the perfect "setup" for a smash or other "kill" return.

Rubber: The best of three games in regulation matches.

Short serve: Refers to flight of serve which is short, that is, just over the short service line; most commonly used in doubles.

Short service line: Front boundary line of service court.

Shuttlecock: Frequently called shuttle or bird.

Side-by-side teamwork: Division of responsibility roughly corresponding to an equal division of the playing court. The dividing line is the midcourt line.

Smash: A rapidly descending flight, very fast and at sharp angle to floor.

Throw: An indistinct hit or sliding contact between the racket and bird, usually the result of catching the feathers in the strings or of drawing the racket away from the bird as it is stroked. This constitutes a "fault."

Toss serve: A serve executed by means of tossing the bird out in front and to the side of the body. Suited to producing any of the service flights.

Trim: String at both ends of the racket face, looped over the lengthwise strings. The side showing the loops is called the "rough" side; the other side, "smooth."

Up-and-back teamwork: Division of responsibility according to a lateral division of the court. In general, the "up" person plays the net area.

Wood shot: Hitting the bird with the wooden part of the racket. This is a "fault."

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Girls and Women's Sports) of the American Association for Health, Physical Education, and Recreation, developed standards for its protective control. It is this group which sponsors the Committee on Women's Basketball that is responsible for the publication of the *Basketball Guide*.

Women's basketball is a game devised by women for women. It provides for a most vigorous team activity in which players can develop skill and qualities of leadership, sportsmanship, and group relationships under wise direction. Each year some of the rules that do not affect the health and well-being of players have changed, bringing about a closer conformity to boys and men's rules. Women are not by nature as strong as men nor do they have the capacity for as much skill, speed, or endurance. Hence, there is reason for the protective limitations of the rules on such things as court and body contact. Conditioning and warm-up practice periods should be provided and an effort made to improve in stamina and skills.

THE GAME

Women's basketball is played by two teams of six players each—three guards and three forwards. The game starts when an official throws the ball to one of the forwards standing in the center circle. By legally advancing the ball these forwards attempt to score through their opponent's basket, while the guards try to gain possession of the ball in order to pass it to their own forwards. The game consists of four quarters of eight minutes each, and the team with the most points at the end of the playing time wins.

EQUIPMENT

Ball. The ball is normally leather covered; it may, however, make use of an

other suitable material that meets all other specifications. It should be inflated to the pressure marked on the ball and can be tested by dropping from a height of six feet. It should rebound between 49 and 54 inches, measured to top of the ball.

Backboards. The backboard may be of any material that is permanently flat and rigid, painted white unless transparent, and either rectangular or fan shaped.

Baskets. The basket nets of cord or other material are suspended from bright orange rings and flanges.

Court. The official court is 94 by 50 feet, divided across the center for the two-court game.

Shoes. Shoes with protective soles and good traction are recommended. Wool socks are worn to absorb moisture and prevent blisters.

Pinnies. Colored pinafores should be worn to distinguish teams. A number of solid contrasting color should be placed on the front (at least four inches high) and in back (at least six inches high)—both at least $\frac{3}{4}$ of an inch wide. Do not use numbers one and two. Combinations of two digits from zero to five may be used.

TECHNIQUES

Basketball is a game of "passing" and "shooting" that involves ever increasing skill and organization. A good foundation in movement and basic skills is important for further progress. One should start with the easier skills and progress to the more difficult building accuracy, aggressiveness, and speed.

RUNNING

Practice should include slow jog, rope skipping, running backward, changes of direction, stops, starts, skips, reverses, feints, and dodges.

CATCHING AND PASSING

Learning to catch high, wide, and low passes and to pass rapidly and accurately while on the move is necessary. Stepping into the throw and using the whole body will add to the ease and speed of play. Two hands are used; but as the player improves, reaching with one hand overhead and to the side will increase the range of effectiveness. Jumping into the air to intercept and bending down to scoop up low balls also increase one's range. Passes are made to someone—usually to a moving player—but ahead of her or to the spot she has designated. This means that the player must maneuver herself so that no opponent is in the path of the ball as it goes to a teammate.

Underhand (two hands) Pass. Holding the ball at one side in both hands, with fingers pointed downward, the arms are swung backward and then forward. As the arms move forward, a step forward is taken to the opposite foot and the ball is released about waist high. The trunk rotates backward on the preparatory action; rotates forward as the throw is made.

Underhand (one hand) Pass. The ball is held in both hands and as the backswing is taken with one hand the other hand guides the ball. The ball is swung forward with one hand low at side.

Chest Pass. Holding the ball in front of the chest with arms bent, the ball is thrown from both hands by forcefully extending the elbows and wrists, stepping into the throw, and following through with the arms and hands.

Over the Head Pass. The ball is held overhead with both hands. With the feet in a forward stride, the ball is snapped forward with a transfer of weight to the forward foot. The ball must not drop behind the head in the backswing.

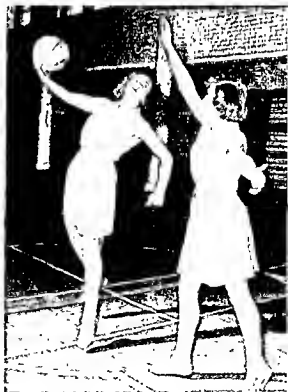
Over the Shoulder (baseball) Pass.

Holding the ball on the palm and fingers of one hand, the arm is swung backward at shoulder level and followed by a push of the ball forward snapping the fingers. Twisting of the trunk and stepping forward of the opposite foot are applied during the movement.

Bounce Pass. Using the action of the chest pass or over the shoulder pass, the ball is directed to the floor so that it bounces about a yard or two in front of the receiver. The ball is kept low in starting and back spin may be applied to the ball.

Hook Pass. Standing sideways to the direction of the pass, and holding the ball in both hands waist high, the player swings the ball to the right hand spreading the fingers on the ball and pressing it to wrist and forearm. The arm swings outward

Fig. 29. Hook Pass.



and upward right as a step or jump is made from the left foot.

Tip, Deflection, or Guiding Pass. Often it is possible to guide a pass to a teammate by strong wrist and finger action propelling the ball. The ball is not caught but redirected to another player. This deflection tends to keep the play moving faster and to surprise the opponents by its unexpectedness.

DRIBBLE

Keeping the body between the opponent and ball, the player strokes the ball to the floor ahead and to the right. Impetus is given once, twice, or three times with one hand or the other; to catch it with both hands completes the dribble.

JUGGLE

This is a means of advancing the ball or evading an opponent. Although rarely done it may surprise a closely guarding player. The ball is tossed from one hand keeping

the body between the opponent and the ball. The ball goes over the head of the guard and is retrieved behind her.

PIVOT, BOUNCE, AND SHOOT

The pivot is a turn in any direction, stepping one or more times with one foot while keeping the other one fixed in place. The turn is made away from the opponent if closely guarded. The pivot may be combined with shooting or with a bounce. If the back is toward the basket, a pivot can be made to the right or left, a bounce added, and a one-hand push shot directed at the basket.

SHOOTING

This is the objective in basketball! It is important to use the fingers for control and to use either hand in a variety of shots. A player should step into the shot, extend the joints, follow through, and then follow in for rebounding. Shooting is done often and close to the basket for good results. An



Fig. 30. Two-hand Set Shot.

arched shot will find more of the basket to fall into than one directed at or over the rim.

Two-Hand Set Shot. For this shot, the feet are in a forward stride or parallel with the weight forward. The ball is held in both hands at chest or waist height, with the fingers spread and the wrists slightly bent. The ball is released by fully extending the arms and snapping the wrists toward the basket.

Two-Hand Underhand Shot. Taking the free throw, the player stands with feet apart and ball at the chest. As the knees bend the ball is brought down between the knees. As the legs extend the arms swing straight forward and upward, looping the ball over the basket.

Push Shot or One-Hand Set Shot. This shot is fast gaining in popularity. The ball is held in both hands and then rolled back onto the right hand and fingers with the left hand. As the left is removed, the right arm extends in shooting and a jump is made from the left foot. This is an all-purpose shot and may be done on the run, from a jump, or standing still.

Lay-up Shot Under the Basket or One-Hand Push Shot. This shot can be taken from either side, or in front of the basket. The ball is transferred to one hand as a jump is taken. The arm holding the ball reaches toward the basket and the ball is released at the height of the jump. It should be banked on the backboard to the right of the basket if the shot is taken on the right, to the left on an attempt from the left side. When executed in front of the basket, the ball should drop over the rim.

Hook Shot. See the hook pass.

Free Throw. Any shot that can be made standing still is used.

JUMPING

An important skill in passing and shooting, jumping is also needed for successful

intercepting, rebounding, and toss-ups. It may be done from both feet, one foot, or with a skip step. The body should stretch out and all joints forcibly extend to get off the floor. The landing should be light, with the knees bent.

REBOUNDING

This is a satisfying element of team play and important to defensive or offensive playing. The technique of taking the rebound from the backboard is the same for the forward or guard. The player should jump to take the ball with both hands at the highest possible point. The landing is made on both feet with the ball securely held and ready for further action. It is up to the guard to prevent the opponents from further shooting; up to the forwards to retrieve the rebound to keep shooting continuously.

STRATEGY

Stationary Screen. A player may legally stand in front of a teammate to prevent an opposing player from cutting in. The forward may pass back to a fellow forward and then remain between that forward and the basket as the forward shoots over her head.

Moving Screen. A player may run alongside a teammate as long as no body contact is made. This forces the defensive player to move around her or to be ineffective in guarding the forward with the ball.

Man to Man Defense. Each player is assigned an opponent to guard. She keeps between her and the basket in defense play and keeps up with her in guarding.

Zoning. The court is divided into zones and each guard assigned her area in which she is responsible for preventing the forward's shooting. She may have a set zone but more players prefer shifting zones to

help out the others on defense. The best combination is to play zone as the forwards receive the ball and change to man to man as the forwards bring the ball nearer to score.

Weaving or Figure Eight. This is a clever method of passing in which a player with the ball throws to a teammate and runs behind her, receiving the ball nearer the side line and moving toward the basket. This may be done with two or three teammates and tends to draw the defense out and open up spaces for the attacking players to cut in.

TACTICS

Guards and forwards should become acquainted with both offensive and defensive tactics. The guards will then be familiar with the tactics used against them. The forwards should study the techniques because they actually are on the defensive when the opposing guards are in possession of the ball.

Offensive Play. In order to be effective, the player must:

1. Keep moving to an open area.
2. Pass the ball ahead of a player, not directly to her.
3. Cut in front of opposing players to receive passes. (It is useless to stand directly behind a guard.)
4. Bounce only when necessary.
5. Try a few long shots to draw out the guards, if it is impossible to work the ball in under the basket.
6. Be sure some player follows up all long shots to retrieve the ball from the backboard.

Defensive Play. To defend well, the player should:

1. Always assign a player to guard the basket.
2. Jump to recover balls off the backboard with both hands.

3. Keep between the forward and the basket. Do not chase after forwards, they have the advantage when you do. Work to intercept the ball as it is passed from player to player.
4. Play the ball, not the person. Guarding too closely is useless against a skilled team. If farther away, you will be better able to determine where the ball will go and will prevent excessive fouling.
5. Guard closely any player who is shooting for the basket but avoid fouling.
6. Try to intercept the ball, when forwards have it near the center line, and if you fail, immediately drop back to be ready for the next play.
7. Leave the defense when own guard gets the ball, and be quick to clear the ball up the side of court to the forwards.

CONDENSED RULES

VIOLATIONS

These are infractions of the rules for which the ball is awarded out of bounds to the opponents. The throw in is taken from the side lines out of bounds except when the ball, or a player with the ball, goes over the end line, in which case the ball is put in play at the end line. Violations are concerned with:

1. Center throw
2. Jump ball
3. Handling the ball
4. Division line
5. Free throw lane
6. Out of bounds
7. Field goal
8. Free throw

FOULS

These are infringements of the rules penalized by awarding one or more free

throws to the opposing team. Players should strive to perfect their play so that personal contact is at a minimum even though moving fast or in a limited area. A double foul is called when players of both teams foul simultaneously. A disqualifying foul for rough play will remove a player from the game. Individual fouls are those charged to the individual player and are concerned with:

1. Making personal contact.
2. Overguarding the ball.
3. Overguarding the player without the ball.
4. Threatening the eyes.
5. Illegal substitution.
6. Delaying the game.
7. Unsportsmanlike conduct.

Two free throws are awarded if the player fouled against is in the act of shooting and the basket is missed.

A team foul is charged against the offending team and shall count toward disqualification of the team. These are concerned with:

1. Failing to provide names and numbers of players and starting line up.
2. Taking more than legal number of time-outs.
3. Abusing the privilege of changing players from one division to the other.
4. Coaching from the sidelines.
5. Addressing officials or opponents disrespectfully.

Know your rules! Consult the latest *Basketball Guide*.

OFFICIATING

There is a need for student and women officials; they can do much to assist in intramurals and community leagues. The Women's National Official Rating Committee has set up standards for awarding ratings to officials. The ratings given are intramural official, associate official, local

official, junior national official, and national official. Each year clinics are held for training purposes, after which written and practical tests are administered. Ask your instructor how to contact the chairman of the nearest local board for detailed information.

GAME ETIQUETTE

All the rules of sportsmanship should be observed when playing or watching basketball. A few of these are:

1. Avoid unnecessary roughness and personal contact.
2. Select a good captain who will be responsible for the team's behavior.
3. Wear the proper uniform for the team.
4. Arrive on the court in time to warm up and practice.
5. Greet your opponent before playing and thank her afterward.
6. Abide by the decisions of the officials. They are in the best position to make judgments.
7. Avoid coaching from the sidelines.
8. Applaud good plays rather than errors.
9. Restrain yourself in expressing your temper and emotions whether winning or losing.
10. Stop when the whistle blows and be alert to the action that should follow.
11. If you foul raise your hand and turn your back so that scorer can see your number.
12. Thank the officials at the conclusion of play.
13. Evaluate your play after the game and do better the next time!

GLOSSARY

Center Throw: Method of beginning game.

The ball is thrown by the official to a

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Bowling

HISTORY

It is believed that the modern game of bowling originated in Italy 1,000 to 1,500 years ago, and was known as "bowles" or "bowling on the green." Even in the twelfth century bowls was popular in England. The original balls were stone boulders.

Bowling is recognized as the oldest surviving English sport, played as early as the thirteenth century. Many games played a part in its development, but the game of nine pins is the one most closely allied to the modern sport. This, played by the Germans, Dutch, and Swiss, was bowled upon beds of clay or cinders. About 1200 A.D., a single board was used to bowl upon, and the nine pins were set up in a diamond shape. This became the rage of sporting men, and at one time was banned in many cities, since it led to gambling. Legend has it that some proprietor, seeking to evade the law after the ban was on, added a tenth pin, and so we have our modern game of ten-pin bowling.

In this country, bowling was organized by the American Bowling Congress in 1895. In 1901, the ABC conducted the first national championship tournament.

There are three types of bowling—ten pins, duck pins, and candlesticks or candlepins. There are variations in the scoring and in the equipment for these games. Whereas ten pins is played with a large ball and large pins, a small ball and pins resembling miniature ten pins are used for duck pins. A small ball is also used for candlesticks, and the pins take their

name from their shape which resembles a candlestick. We are primarily concerned with the game of ten pins.

THE GAME

The game of bowling is an individual sport played indoors—usually in large recreation centers called bowling alleys or lanes. It is a game readily enjoyed by both sexes, all age groups, beginning or highly skilled participants. The object of the game is to clear the boards of all ten pins with a single ball rolled down the lane. Because this feat, called a strike, requires a high degree of skill and accuracy, it is not always accomplished; as a result, the art of "spare bowling" has been developed. A second ball is rolled, and the player attempts to knock over the remaining pins with this second ball. Practice in "second ball techniques" is important; the ability to get the spare makes the difference between the good bowler and the poor one.

Although bowling is an individual sport, leagues and tournaments have been organized in which teams of four or five bowlers compete, and the combined total of their individual scores determines the winning team. Bowling is becoming increasingly popular, and with good reason: it offers wonderful recreational advantages now, and a lifetime of enjoyment for the future.

EQUIPMENT

Bowling Shoes. This necessary equipment may be rented or bought. If the bowler is right-handed, the left foot should slide as the player approaches the foul line; the left shoe, therefore, has a leather sole. The sole of the right shoe is of composition rubber or another substance that will provide traction.

Ball: The ball may be either a three-

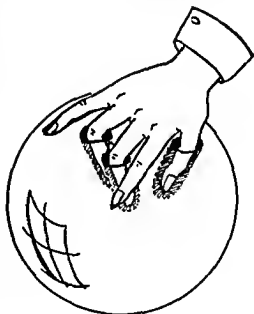
finger or a two-finger ball. The weight must be from twelve to sixteen pounds. Women usually use the lighter balls. Quite frequently the lighter balls are blue or multi-colored, whereas the heavier balls are black.

In fitting the ball, the thumb should be inserted at least three-fourths of the way into the thumb hole. Spread the fingers in a fan shape over the ball. The second joint of the second and third fingers should extend at least one-fourth inch over the inside edge of the other two holes. Now insert the second and third fingers into the two holes. To fit properly, the holes should be loose enough for comfort but tight enough to maintain friction or grip. With fingers inserted, the space between the palm and the ball should be just big enough to insert a pencil.

Clothing. It should be loose enough to insure freedom of movement.

Pin. The standard pin is fifteen inches high and measures two-and-one-half inches

Fig. 32. Fitting the Ball.



in diameter at the base. It weighs between three and three-and-one-half pounds, and is usually made of hard maple or laminated wood.

Lanes or Channels. Today the bowling lane is made of maple and pine wood, forty-one to forty-two inches wide and sixty feet long from the foul line to the head pin. On the approach area, sixteen inches in length is standard. Gutters border the lane on each side.

APPROACH AND DELIVERY

There are three types of recognized approaches: the three-step, four-step, and five-step. The four-step is the most highly recommended for the novice because of its even rhythm. An uneven rhythm is harder for the beginner to master, and seems more tiring.

Take a stance ten to twelve feet behind the foul line. The body is erect or slightly crouched, relaxed, and with shoulders facing the pins. The feet are together or with the left foot slightly forward. The ball rests on the palm of the left hand, held at a point between the waist and the shoulders and a bit away from the body. Both hands are under the ball. The first step is with the right foot, and with that step, the ball is in motion forward with the right arm gradually straightening. The wrist is kept firm.

As the feet start moving, the knees should bend slightly; the body is relaxed, and the back bends a little with each step. Approach the foul line in a straight line. Timing, deliberation, and concentration are necessary in stance, footwork, and delivery.

The ball should go into the backswing with the second step, the left arm forward for balance. The third step, again with the right foot, brings the ball farther back and

up. The bowling hand swings the ball back until it is almost shoulder high when going into the last step. Too high a backswing will break up the harmony and the momentum of the delivery.

You are now ready to make the delivery. The left foot slides to the foul line on the fourth and last step, with the ball coming forward and leaving your hand at the same time. Release the ball just before it contacts the floor and at a spot just beyond the foul line. The knees are bent so that the body is near the floor. The ball must be rolled off the hand smoothly with no bounce. Follow through with the arm. Speed is not necessary; in fact a slow ball tends to topple more pins.

TYPES OF BOWLED BALLS

Straight Ball. Bowling a straight ball is recommended for beginners and for those who bowl only occasionally. The ball is held in such a way that at the release the thumb is pointing directly down the lane at the pins. During the whole approach the thumb points toward the 1-3 pocket or the space between the head pin and pin number 3. When the ball is released eight to twelve boards from the right hand gutter, it should follow a straight diagonal course to the right of the head pin.

Hook. The hook delivery requires a great deal of practice, but is reputed to score higher than the other types of bowled balls. The grasp resembles that used to carry a suitcase, the thumb pointing toward the left throughout the approach. As the ball is released, the thumb leaves the ball slightly ahead of the fingers, which imparts a slight spin to the ball. The ball progresses down the lane parallel to the right gutter and off center. As forward momentum decreases, the spin or hook begins to take effect, causing a turn to the 1-3 pocket.

Curve. The curve delivery consists of a slight turn of the wrist to the left upon release of the ball, causing a long curved course to the pins.

Back-up Ball. The back-up ball is one that spins from left to right because of a slight turn of the wrist on delivery. To be most efficient it must hit the 1-3 pocket. This is not a recommended technique but

is illustrated in order to be recognized if it occurs.

Dead Ball. In delivering the ball, be careful not to release it with the back of the hand toward the pins. This type of delivery produces a ball which, although it hits the 1-3 pocket, is usually ineffective because it tends to skid and slide, and is too easily deflected.

Fig. 33. Course for a Straight Ball.

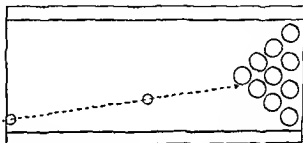


Fig. 34. Course for a Hook Ball.

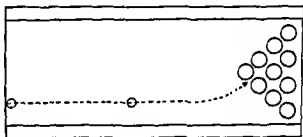


Fig. 35. Course for a Curve Ball.

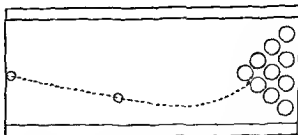
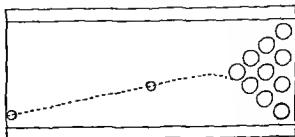
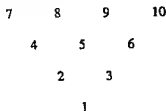


Fig. 36. Course for a Backup Ball.



PIN SETUP

The following is the position used for the pins:



SCORING

A game, line, or string consists of ten frames. Each bowler is permitted to roll two balls in each frame. Should less than ten pins be knocked down with the two balls allotted to a frame, then the combined number of pins down from both balls is added and the number placed in that frame. The same is done with each succeeding frame. Always remember that it is a running score, and the total is added each time.

Should a bowler get a spare, the mark indicating the spare should be placed in the upper right-hand corner of the frame, but nothing else until the next turn, when the score obtained by the first ball is added to ten and placed in the previous frame.

Should a bowler get a strike, the score is held over in the same way, but here she is allowed ten, plus what she makes on her next two balls. If a strike is made then, the second ball is not rolled. If, in the tenth frame, a strike is made on the first roll, the bowler is entitled to two additional rolls. If a spare is made in the tenth frame,

one more ball is rolled, and the score is added to the spare.

Note that in the sample line the two small boxes in each frame indicate the results of each bowled ball. See if you can identify each mark in the sample game.

SCORING OF A SAMPLE GAME

AIMING

More pins fall when the ball hits the 1-3 pocket. Three methods of aiming are used by bowlers.

(a) In aiming at pins, concentrate your gaze on the spot you wish to hit, usually the 1-3 pocket or space between pins 1 and 3. Direct your arm toward this spot in your forward swing, as you release the ball, and during the follow through.

(b) Spot bowling is generally considered to be more accurate. In spot bowling pick a spot on the lane a short distance from the right gutter and near the foul line. Your ball should roll through this spot toward the 1-3 pocket. Concentrate on this spot during your approach, swing, delivery, and follow through, watching it, not the pins until after you have released the ball. Adjust your starting and release positions in relation to the direction your ball takes, for instance, if your ball goes too far to the left, move a little to the left, and bowl through the same spot. Your ball should now go farther to the right. You will have to find the best spot for you, no two good bowlers use the same spot.

(c) In indirect spot bowling follow the procedure for spot bowling until just be-

Fig. 37. Scoring.

NAME	HDCP.	1	2	3	4	5	6	7	8	9	10	TOTAL
1 Nancy Jones		7-	6.3	6.4	X	6.3	7.2	7.8	8.4	7.4	X 5.3	
		7	15	35	54	63	73	81	89	109	127	127

fore releasing the ball. Then shift your gaze and direct your follow through to the 1-3 pocket.

SECOND BALL TECHNIQUES

Because not every Ball bowled produces the desired strike, it is important for the bowler to learn the technique of spare bowling, which is knocking down the remaining pins with the second ball.

The most popular system for making spares is the cross-alley system. This means that to hit pins standing on the left side of the lane—the no. 7 pin, for instance—the approach and delivery are from the right side, bowling diagonally across the lane toward the pins. For leaves on the right side, the approach and delivery are from the left. There is a feeling among better bowlers that this system creates greater deflection of pins and allows less chance of picking off just one pin from a group left standing.

Some of the more common leaves and suggested methods of converting them will be briefly discussed below.

The following leaves can be effectively converted by approach and delivery from the *right* side of the lane.

- 1-2-4 The ball should cross over the head pin, and hit in the 1-2 pocket.
- 1-2-4-7
- 1-2-4-10
- 2-4-5-8 The ball should hit the *right front* of the 2 pin.
- 2-4-7
- 2-7 or The ball should cross the 2 pin and hit it on the left side while baby split heading toward the 7 pin.
- 4-9 The ball crosses over to hit the 4 pin on the left side, deflecting it toward the 9 pin.
- 5-10 Ball crosses over to hit the 5 pin on the left side deflecting it toward the 10 pin.
- 1-3-6 Although these leaves are on the right side they can be converted
- 1-3-6-10

by rolling from the regular strike position and aiming at the 1-3 pocket. They can also be converted with a cross-alley roll from a left-side approach.

The following leaves can be effectively converted by approach and delivery from the *left* side of the lane.

- 3-6-10 Ball crosses over the 3 pin hitting it on the right side while traveling toward the 6 and 10 pins.
- 6-10 While this leave can be converted with right side delivery there is less chance of error if the 6-10 pocket is hit from a left side cross-alley roll.
- 3-10 The ball crosses over the 3 pin hitting it lightly on the right side while heading toward the 10 pin.
- 3-5-6-9 Ball crosses alley and directly hits the 3-6 pocket.
- 5-7 This is best converted by hitting the 5 pin on the right front side, deflecting it toward the 7 pin.

From which approach, and with what hit would you most effectively convert the following leaves? 2-4-5, 4-7, 4-5, 5-9, 5-6, 6-7?

Practice and experimentation are necessary to determine just how far to the right or left to move in the approach for each conversion. With fewer pins to aim for, the hit must be more accurate also, but with practice and concentration your spare bowling will greatly improve your bowling game and score.

BOWLING BO'S

1. Use the proper equipment.
2. Fit the ball well to hand. Not necessary to use chalk or public towel.
3. Practice uniformity and harmony in your stance, approach, and delivery.
4. Use the four-step approach.
5. Keep relaxed at all times, and concentrate either on the head pin or on

- a chosen spot on the lane. It will help your aim, control, and score.
6. Keep a uniform speed at all times, remembering that a slow ball usually topples more pins.
7. Follow through fully with the arm after each delivery.
8. Learn through practice and by watching good bowlers.
9. Remain behind the foul line at all times.
10. Bend the knees, thus preventing the ball from bouncing.
11. Practice! Bowling is a game of skill.

GAME ETIQUETTE

1. Use only one ball. Wait until that ball returns before rolling the second time.
2. Avoid stepping behind a bowler who is preparing to throw her ball. Wait until she has finished before you step up to get your ball.
3. If two bowlers are ready to bowl, the one on the right has right of way.
4. Set the ball gently on the floor to signal pin-boy to reset the pins.
5. Wait until the pin-boy is out of the way before rolling the second ball.
6. Avoid crowding at any time.
7. Keep your temper when you miss.
8. Avoid commenting unfavorably on your own or another's score or form in delivery. Check your own form. If, however, someone wants help, and you are able to assist, do so.
9. Be sure that neither your ball nor the surface of the floor on which you are bowling is slippery or rough.
10. Be careful that fellow bowlers as well as spectators are clear of the approach area before you begin to bowl.
11. In removing your ball from the rack, place your hands on the outside of the ball (never between balls) to pick it up.

12. Be a good sport and a lady at all times.

GLOSSARY OF TERMS

Approach: The three, four or five steps taken preliminary to releasing the ball.

Baby split: When the 3-10 or 2-7 combination is left standing after the first ball. See also *Split*.

Back-up: A ball released in such a way that it spins from left to right.

Brooklyn side: The 1-2 pocket.

Double: Two successive strikes.

Error: Failure to get the remaining pins on the second ball unless there is a split.

Sign for an error:



Follow through: The continuation of the arm swing after the release.

Foul: Crossing the foul line in delivery. The score is void for that ball.

Foul line: A black line crossing the floor at the start of the lane. It is not to be crossed or touched in approaching.

Frame: Unit of a game. Two balls, if needed, are allowed for each frame.

Game: Ten frames. Also known as a line or string.

Gutter: The depression running along each side of the lane.

Head pin: The number 1 pin.

Head pin game: A game in which points are scored only if the head pin is knocked down. Twelve frames of only one ball each are allowed.

Hitting the pocket: Hitting the pins or spot between pins 1 and 3.

Hook: Delivering the ball so that it turns to the left just before reaching the pins.

Lane: Preferred term for the alley—the area between the two gutters. The ball

must roll the length of the lane in order to hit the pins.

Lean: A hit that grazes on one side causing it to slide across the lane in the opposite direction to take another pin.

Line: Ten frames or a game in bowling.

New York side: The 1-3 pocket.

Perfect score: A perfect game of 300 points.

Picking a cherry: Knocking down only the front pin of pins left standing.

Pin-setter: The boy who works in the pit resetting pins or the automatic machine which resets pins.

Pit: The depression behind the pins.

Setup: The arrangement of pins left standing after the first ball.

Sleeper: A pin left standing immediately behind another one and not visible to the bowler.

Span: The distance between the thumb and finger holes on the ball.

Spare: The result of knocking down the remaining pins of the first ball with the second ball. Sign for a spare:



Split: After the first ball is bowled, the head pin is down and the remaining pins are separated by intermediate pin or pins having fallen. Sign for a split:



Strike: Clearing the boards or knocking down all the pins on the first ball. Sign for a strike:



Strike-out: Ending the game with a strike in the tenth frame, followed by two strikes.

String: Ten frames or a game.

Turkey: Three successive strikes.

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Camping and Outing

HISTORY

Camping is as old as man. Early man lived with nature; he camped the year round, using the wonders of the out of doors to make himself more comfortable—indeed, to help him exist. Man learned to appreciate the world about him, to draw from his surroundings what he needed, and to care for it as he should. Nature provided his home, clothes, food, warmth, and protection from both elements and wild animals. The story of civilization tells how man through the ages learned to make more and better use of the world in which he was living.

Our own land has always known campers. Before the white man arrived, it was inhabited by men whom we have learned to respect as the greatest of all campers, the American Indians, whose vast knowledge and understanding of the out-of-doors we still make use of today.

The founders of our nation were campers. Those early settlers who came from a civilized world to a wilderness, strange and intriguing, knew from the moment they arrived that their very survival depended upon their ability to live among the elements. The stories of the self-reliance and ingenuity of our pioneer fathers is the very story of the early history of our nation. These men learned to know, understand, use, and enjoy nature. It is this spirit which has passed down through generations of fathers and sons, and is still alive in our modern civilized world. Yes, our living today is quite different from that of our pioneer forefathers; our urbane communities with their planes, subways, and department stores seem far removed

from the log cabin and covered wagon. But as America was modernized and man became less directly dependent upon nature, some people realized a longing to return to the beauty and fun of the out-of-doors.

Today many Americans spend their vacations boating, fishing, hunting, and living in the country; some go in family groups, others attend organized camps. Camping, whether individual or organized, is the continuation of a great American heritage. It may rightfully be called the oldest American sport.

The American Camping Association, with members in all sections of the country, acts as a leader in developing and encouraging camping, setting standards for camps, and trying new ideas in camping.

The American Youth Hostels, Inc., also promotes interest in outdoor living, stressing a greater knowledge, understanding, and love of the world around us.

Including camping as a regular activity in the physical education program is a rather recent adventure, but it has proved to be a very popular as well as useful activity. Girls have put to use their camping skills in summer jobs as camp counselors, and in planning and enjoying their own vacations.

CLOTHING AND EQUIPMENT

The equipment you need depends upon the activities you include in your program. For general use you need appropriate camping clothes along with a few of

the following useful articles: knife, toilet articles, notebook and pencil, camera, first-aid kit.

CAMP CRAFT

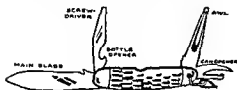
KNIFEMANSHIP

The knife has been called the camper's best friend. You will find it useful in many camping activities. The pocketknife, on the order of a Boy or Girl Scout knife, is quite practical for camp purposes. Some campers prefer a sheath knife and find it as useful and safe as the pocketknife. The following diagram depicts a pocketknife with its parts labeled:

Whichever type is preferred, one should remember that a knife is an expensive and valuable piece of equipment, and it deserves proper use and care:

1. Keep it clean and well oiled at all times.
2. Open and close it safely.
3. Sharpen it properly, and keep it sharp at all times. A dull knife is more dangerous than a sharp one. Sharpen your knife in this way:
 - (a) Place the blade against a moistened whetstone at a 45-degree angle with the edge away from you.
 - (b) Circle the blade against the stone in clockwise direction, moving along the entire edge of the blade.
 - (c) Repeat on the other side, knife blade toward you, circling counterclockwise.
4. Use your knife properly:
 - (a) Hold parallel to stick with thumb on handle.
 - (b) Use a sliding stroke, away from you (never whittle toward you).
 - (c) Use the same spot on the blade throughout the stroke. Do not

Fig. 38. Pocketknife.



let it slip to one side as you cut.

- (d) Protect its point.
 - (e) Whittle away from you to make a point on a stick.
 - (f) Cut on the diagonal to cut across a stick.
 - (g) Cut diagonally, to notch a stick, from both sides making a V. A V on both sides meeting in the middle may be necessary to cut through a large stick.
 - (h) Dig the blade in to make shavings, and then slice; to make a fuzz clump do not shave curls all the way off.
 - (i) Slice toward the top of the branch to trim it.
5. Suppose you own a sheath knife:
- (a) Keep it in the sheath when not in use.
 - (b) Wear it on your belt in the proper fashion.
 - (c) Use and sharpen it as you would a pocket knife.

AXEMANSHIP

The thirteen-inch axe, or hatchet best meets the needs of the average camper. It is light, easy to carry and use, strong, and inexpensive. The following is a hatchet with its parts labeled:

Proper use of the hatchet includes:

1. Wear it properly, in its sheath, when not in use.
2. Carry head down, bite out, while using.
3. Hand to others head first, pole toward their hands.
4. Keep the axe dry, clean, and sharp.
5. Keep the head tight, for safety.
6. Original sharpening should be done by an experienced person, but to keep your axe sharp:
 - (a) Support against a block of wood, bite toward you, and stroke with

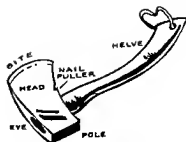


Fig. 39. Hatchet.

a flat file from the bite edge toward the pole.

- (b) Rub in a circular motion over the edge, with your carborundum.

In using the axe, hold it in one hand at the extreme end of the helve. Stand with the feet perpendicular to the log; never put your feet on the log. Allow yourself room for a free swing, and chop only at something substantial, that is, a chopping block. Chop so that the axe enters the log at a 45-degree angle; chop a V-shaped wedge in in each side of the log; chop alternately from right and left, removing a chip of wood with each blow. If removing branches from a fallen tree, stand on the opposite side of the log and cut as close to the trunk as possible, working from heavy end to top. When cutting a small stick against a log or block, sever the stick with one blow at the spot where the two pieces of wood touch. In splitting wood, place the axe blade on the wood and bring both down against the chopping block simultaneously. With the axe in the wood, repeat until the length of wood is split. In sharpening a stake, hold it upright against the block; chop down and toward the center from four sides, making a point. If you are not chopping, *stay away from the chopper.*

The real value of learning the proper use of knife and axe is not the knowledge itself, but the uses to which you can put it. With a little skill and imagination you can create a world of useful and decorative articles.

With practice, outdoor cooking utensils and implements, useful camping accessories, and innumerable arts and crafts projects can be made, and yours is the just plain fun of whittling.

WOODS LORE

HIKING

Before one can really enjoy the out-of-doors, she must first become acquainted with what it has to offer. A walk through the country in its woods, meadows, and fields is strongly recommended. One must *hike*! This does not mean wandering aimlessly around with no definite goal. Real hiking is walking with a purpose. Through hiking many of the secrets and wonders of the out-of-doors are discovered, but to gain the most from such an adventure, one should *follow a plan*. The following are points to consider in planning a hike:

1. What to wear.
2. Where to go.
 - (a) Map out a course ahead of time.
 - (b) Decide upon what you want to see: wild flowers, trees, streams,

insects, plants, birds, lakes, animals.

- (c) Gather information ahead of time; plan projects with your subjects before you go.

3. What to take.

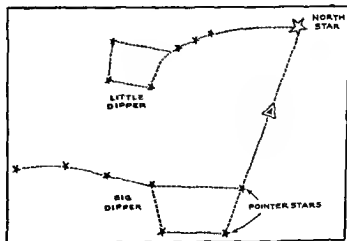
- (a) Consider the length of your journey.
- (b) Decide whether you will eat or sleep out.
- (c) Check equipment you will need.
- (d) Know what to do on the way there and back.
- (e) Divide up the duties among all who are going.

PACING

Pacing is important in hiking and orienteering. A pace is the average length of a person's stride. An easy way to find the length of your pace is:

Measure a distance (i.e. 100 feet) and walk it off three times, counting your steps (i.e. $38 + 37 + 39 = 114$). Divide this by three to get your step average (38), then divide the distance paced by your step average to find the length of your pace ($100 \div 38 = 2\frac{1}{2}$ feet).

Fig. 40. Finding North Star by the Dippers.



Hiking groups often set an average pace if accuracy of distance or direction is important.

DIRECTION FINDING

When in unfamiliar surroundings there is always the possibility of getting lost. This will not ruin your fun if you know your directions and how to find your way. There are various methods of finding directions.

By the Sun. Stand with your right shoulder toward the sun in the morning, left shoulder toward it in the afternoon, and you will be facing North. Once you have found North, face it; East is then on your right, West on your left, and South behind you.

By the Stars. Follow the Big Dipper; locate its pointer stars. Follow the direction of the pointer stars until you see the Little Dipper. The North Star is the last star in the handle of the Little Dipper. Face it and you are looking in the general direction of North.

By a Watch. Hold your watch level and in the sunlight. Place a twig over the center point of the watch with the shadow falling on its face. Turn your watch until the shadow falls on the hour hand.

The point halfway between the hour hand and the numeral 12 is North, going the shortest way (clockwise in the morning and counterclockwise in the afternoon).

Fig. 41. Finding North at 7.10 A.M.

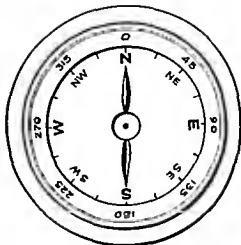
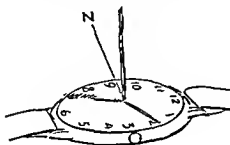


Fig. 42. Compass.

(By reversing this procedure you can tell time with a compass.)

By a Compass. This method is most accurate. The compass is an instrument which has a magnetized needle that points in the direction of North. The face of the compass is called a dial, and is marked in two ways:

1. With letters, naming the different directions: *N*, North; *S*, South; *E*, East; *W*, West, and *NE*, Northeast; *NW*, Northwest; *SE*, Southeast, *SW*, Southwest; and *NNE*, North Northeast (between North and Northeast); *ENE*, East Northeast.
2. In degrees, with: North, 0° or 360°; East, 90°; South, 180°; West, 270°; Northeast, 45°; Southeast, 135°; Southwest, 225°; and Northwest, 315°.

In some compasses the needle moves, the blue end being magnetized, and pointing North, whereas in others the needle remains constant and the dial swings around. The former type is most often used.

To use a compass with a moving needle:

1. Unwind the stem so the needle swings freely.
2. Hold the compass level; when the

needle stops swinging it is pointing North.

3. Set your compass; carefully turn the compass until *N* comes under the needle.
4. Face a particular object, to determine its direction, and repeat steps 1, 2, and 3, above. Keep the compass "oriented," or "set," and point a twig or knife blade from the edge of the compass toward the object. The end of the twig on the compass will point to the direction of the object. This is called *sighting with a compass*.

By Maps. If you are in unfamiliar territory a map of the area is useful. This may be a prepared map or one which you mark while there. Three types of features are marked: water—lakes, streams; relief—mountains, valleys; and culture (man made objects)—roads, buildings.

The top of a map represents True North, marked with *N*. Magnetic North may be marked *MN*. You can mark your map by *inspection* using the surrounding terrain to plot your approximate position on the map, or you can mark your map *by compass*. Place the compass on the map, the needle point corresponding to *MN*. Using the degrees on the compass from *MN* and prominent terrain features that correspond to those on the map, you can locate your position or plot a course of travel. More detailed information may be obtained from the United States Coast and Geodetic Survey, or may be found in *Let's Go Camping* (listed in the bibliography).

TRAIL BLAZING

Depending upon the environment, trails can be marked by means of rocks and stones, brush, or grass, or by blazing trees (this is injurious to trees, however). These

can be found in *Tracks and Trailcraft* (listed in the bibliography).

SIGNALING

It is often necessary to signal to other members of your group while on a hike or trip. The methods of signaling which you use will depend upon your experience and available equipment. Some common signals include:

- Field signals.
- Morse code.
- Flag signals.
- Whistle signals.

ORIENTEERING

Orienteering, a Swedish sport, is fun once you have learned to use your compass. In *orienteering* you map a course by using the degree readings on your compass, and measuring the paces you travel in each direction.

The Silva Practicing Compass will help the beginner, but you can achieve the same result using your compass and a pointer or stick.

1. To find the degree reading of a sighted object: Face the object and point a stick toward it. Place the compass over the stick, and set the compass. The point of the stick will now show you the degree reading of the object.

2. To pick a degree or direction to travel: Place your pointer directly in front of you, and under the desired degree on your compass. Turn *yourself* around until the magnetic needle is over *N* on the compass. You are now facing the desired direction. Sight a landmark ahead before moving. Measure your paces to it, and repeat the process when you change directions.

Using either of these methods or a com-

bination of both you can map out a course for someone else to follow, or record one which you might want to re-use.

WEATHER

To anyone who is living or working in the out-of-doors, weather is of utmost importance. Nearly all camp plans are dependent upon weather conditions. Because campers are often not near enough to civilization to hear the weather report, they must learn to use their eyes and ears and become their own weather forecasters. A good camper should know and understand the various types of weather and its accompanying phenomena: temperature and air pressure; fog and dew; snow, sleet, hail, and frost; lightning and thunder; rainbows and halos around the sun or moon; cloud formations; and wind direction and velocity.

A real camper studies the weather and has scientific bases for his weather predictions.

FIRECRAFT

Fire has been named man's friend and servant in the out-of-doors. Any weathered camper will tell you that there is nothing more useful than the camp fire. Man's privilege to use fire is accompanied by the responsibility to use it properly. It is a camper's duty to learn to build, use, and extinguish fires correctly. A good fire is:

1. Built in a safe place.
2. Just the size needed to serve its purpose.
3. Under control at all times.
4. Extinguished when no longer needed.

Preparing the fire site includes:

1. Picking a spot away from trees (living or dead), shrubs, stumps, or fallen pine.

2. Clearing a spot of an approximately three-foot radius.
3. Dampening the ground, and circling the area with rocks or green logs.
4. Having implements handy that would be useful in case the fire should spread.

The use and care of matches includes:

1. Keeping them dry, either by waterproofing ahead of time with paraffin or by storing in a watertight container.
2. Dividing and packing in separate places.
3. Lighting only when needed and disposing of matches into the fire.

WOOD GATHERING

You will need three main types of wood. Collect and stack each type in a separate pile for convenience. Your woodpile should be near your fire-site, but not beside it.

Tinder. This wood that catches fire from a match is no thicker than a matchstick. Some types of *good tinder* include shavings, fuzz clumps or sticks, fine twigs, pine needles, and pieces of bark. *Avoid* using leaves, paper, grass, or green twigs. Woods which produce a quick flame are hemlock, pine twigs, grapevine bark, and weed tops.

Kindling. This consists of wood pieces that range in size from tinder to pieces as thick as your thumb, and six to twelve inches long. Split wood makes excellent kindling. Good wood for kindling includes chestnut, maple, apple, spruce, pine, and birch.

Fuel (including fire logs). Split or whole logs or charcoal for long lasting fire and coals is the main fuel. *Good lasting coals* come from birch, ash, hickory, beech, oak, and locust. *Avoid* using elm, poplar, rotten wood, willow, and green pine. They do not burn well.



Fig. 43. Basic Fire.

BUILDING THE FIRE

Start with a handful of tinder, two handfuls of kindling, and enough fuel to keep fire burning while you get more. Start with a basic fire, then continue with the following:

1. Place three pieces of wood in the shape of an *A*, base facing the wind.
2. Add tinder in the angle which is windward, leaving tunnel for air.
3. Light tinder, gently adding more until fire has a good start.
4. Add kindling; place each piece separately, adding where fire is best.
5. Graduate the sizes of your pieces, and when the fire is hot, add fuel, building into the type of fire needed.

TYPES OF FIRES

A few of the common ones are discussed here. Other useful ones can be found in *Camp Counseling* (listed in the bibliography):

1. The Indian Teepee gives a quick, hot fire with heat concentrated in a small area.
2. The crisscross is good for making a bed of lasting coals, and it burns quickly if the sticks are about one inch in diameter.
3. The hunter-trapper is a good fire to cook on. Use two green logs in an open *V* facing the wind, basic fire between them, and green sticks across the top.

4. A reflector fire is excellent for baking. Build a crisscross fire high against rocks, logs, or a tin foil reflector oven that must be upwind from the fire. Burn to coals, and utilize the heat from the reflector to bake the food.
5. A fire in a hole is excellent for preparing one-pot meals. Dig a pit, and line with stones. Build the fire inside, and burn to coals. Place the pot inside, cover, and mark the spot.
6. Other excellent cooking fires include the automatic stew fire, trench fire, stone hunter-trapper, and Indian star or lazy man's fire.
7. Council fires or campfires are built ahead of time, thus necessitating a sturdy foundation. Use more tinder and kindling in building, and have a supply of fuel in the event it is needed. The most common types of campfires are Indian teepee, log cabin, and altar-fire.
8. Disposal fires are used to burn rubbish. A hot crisscross fire is good; the rubbish is added piece by piece, and the remains buried.

Extinguishing the fire as soon as you are finished with it is important:

1. Let the fire burn down, and scatter the coals, breaking up the large pieces.
2. Sprinkle the water or sand on, and stir. Cover with sand or dirt.
3. You may safely leave if you can place your hand over the former fire spot.
4. Save large pieces of wood for later use.

OUTDOOR COOKERY

There is nowhere on earth that food, cooked properly and carefully, tastes so good as it does out-of-doors! Anyone can burn food; it takes a real camper to serve

it "done just right." Begin with simple things, and concentrate on your firebuilding at first, for a good fire is the secret of good cooking. Types of outdoor cooking include:

1. Toasting: brown food on a stick over coals.
2. Frying: done in a pan over hot coals.
3. Baking: on a green stick, takes longer than toasting, for the inside must get done; hot coals are best.
4. Broiling: cooking meat directly over heat; frequent turning over hot coals gives best results.
5. Boiling or stewing: meats or vegetables cooked in a small amount of water. Cook over coals in a covered container.
6. Barbecuing: slowly toasting meat on a spot; frequent turning over coals is necessary.
7. Tin can stoves: frying over a flame on a number-10 can gives best results.
8. Planking: cooking meat or fish on a board by reflector heat.
9. Reflector baking: ovens made from tin cans or aluminum foil are excellent for pastries. Use coals.
10. Non-utensil meals: ingenuity and your knife are your best bet; no standard utensils are used.
11. Cooking in a bole: good for one-pot meals, clams, and so on. Food is cooked in the bole, so coals should be used.

MEAL PLANNING

Many books are available that contain well-balanced, practical, good outdoor meals. If you are planning the meals for a camping trip use some of these favorite camp menus for your group. Try as many meals as you can that use various types of outdoor cooking. Experience is the best teacher.

Be sure that your meals are well balanced, and that you are taking the necessary amounts of all ingredients. Do not skimp; people have healthy appetites out-of-doors, but they should not overload! Wasted food shows poor planning. Books are available with directions for cooking for groups.

PACKING THE FOOD

If the food is to be transported, it should be taken to its destination in the easiest, lightest, and safest method. The packing and transportation should be considered when the meals are planned, because many foods are more easily packed than others. Here are a few packing tips:

1. Pack only what will be needed, and put it in sturdy, labeled containers.
2. Dry foods are easily transported in cloth bags.
3. Liquids go in light weight cans—never bottles! Put jellies in wax cartons.
4. Breakables should be in corrugated paper; crushables get padding between them.
5. Vegetables must be cleaned before packing, and packed according to meals.
6. Waxed paper, aluminum foil, and plastic wrappers keep foods fresh longer.

Helpful hints in camp cookery include:

1. Rubbing yellow soap on outside of kettles before placing over fire simplifies scouring.
2. Scouring kettles with sand may be done.
3. Cooking over coals is most successful.
4. Rinsing a pan in cold water, before scalding milk in it, is suggested to prevent milk from sticking.
5. Boiling a little vinegar and water in pans takes the fish smell away.

KNOTCRAFT

Knots are an important part of the camper's life. Her rope and the ability to tie it whenever, however, and wherever she needs it are of endless value to her. Knot tying includes the making of bends, hitches, knots, slings, splices, and lashings. Each type of knot has its specific purpose. Generally, *knots* are for shortening the rope, joining ropes, making a loop in the rope, or preventing a rope from slipping through a hole. *Hitches* secure the rope; *slings* are for holding articles. Good knots are easily tied and untied, and fulfill their purpose. A good camper should know how to tie and use some of the common knots.

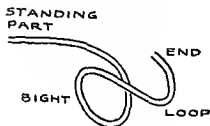
Directions for tying various knots can be found in many campcraft books, but before you try them, learn these fundamental *knot terms*:

1. **End:** part which leads through a knot.
2. **Loop:** bend in rope in which the rope does not cross itself.
3. **Bight:** end of rope crosses itself.
4. **Standing part:** long part of rope.

Whipping a Rope: This method of wrapping your rope with string prevents it from unraveling. Some *common knots* and their uses are:

1. **Overhand knot:** used to enlarge the end of a rope.
2. **Square knot:** for joining two ropes of equal thickness.
3. **Sheet bend:** for tying together two ropes of unequal thickness.

Fig. 44. Knot Terms.



4. **Clove hitch:** to fasten a rope between two poles, that is, a clothesline between two trees.
5. **Bowline:** to make a permanent loop in a rope.
6. **Half-hitch:** for fastening a rope to a post or through a ring.

These are only a few of the many useful knots that you can use in camping. Try these, then learn others not listed here.

Lashing. Lashing is the fastening of objects together by means of rope. There are various types of lashing. The type you choose depends upon the angle at which you would like the two objects joined. Directions for the following types are given in most campcraft books:

1. **Square lashing:** joins sticks together at right angles.
2. **Diagonal lashing:** joins sticks to form an X.
3. **Round lashing:** joins ends of poles together parallel to each other.
4. **Continuous lashing:** joins sticks across each other to form a framework.

NATURE STUDY

Woods, fields, lakes, streams, and seashores provide perfect classrooms for the study of nature and wildlife. Volumes have been written on the recognition of various species of plants and animals, and while this provides valuable background, the real importance of nature lore lies in the understanding and appreciation of plant and animal life.

Some of the more common phases of nature study include:

1. **Trees, plants, and flowers**—recognition, uses, value, and care.
2. **Insects and birds:** collections, mountings, identification, care, and feeding.
3. **Snakes and small wild animals**—hab-

its, identification, cautions, feeding, care as pets.

4. *Conservation*—care, duties, and responsibilities connected with the use of outdoor areas.

CAMPING OUT

A successful trip is the result of careful planning, proper packing, good judgment on the camp site, and the satisfaction of knowing that you have cared for yourself and your camp site in the best way possible. The following are a few points to consider in camping out:

1. Pack before you leave. In making a bedroll, your poncho goes down first. Place the first blanket with its left edge down the center of the poncho. Place the second blanket with its right edge down the center of the first blanket. Alternate the blankets this way until all are down. Fold the sheet, and put it in the middle. Beginning with the last blanket you put down, fold them in order until all are together. Pin or baste together at the bottom, and fold over the poncho and snap. If you are using a sleeping bag, roll it tightly to facilitate transporting.

In packing your knapsack, include your personal equipment as well as any items you will need for specific studies or duties. Pack according to use, the first to be used on top, the last on the bottom. The heaviest items go on the bottom, and the lighter ones on top.

2. Find a suitable camp site. In so doing, you should consider a source of food and water supply, and a convenient spot for sleeping bags, tents, and so forth. Be sure the site is free of roots, holes, dead overhanging branches, bugs, and wet ground. Protection from wind and rain is as important as a good cooking location. A pleasant view also helps to make your stay more enjoyable.

3. Prepare your site. Pitch the tents with the open side away from the wind, and on level ground. Ditch your tent according to the ground contour to prevent rain water from running in. Prepare the spot on which to sleep.

4. Sterilize your drinking water, boiling it for approximately fifteen minutes. Pour it from one sterile container to another for better taste.

5. Take care of your wastes. For human wastes, prepare a screened place downstream, if near water, of the proper size to accommodate your group. Find a suitable place to bury garbage and other unburnables.

6. Care for your camp site while you use it.

7. Leave your site in perfect order. All wastes should be destroyed or covered, and all holes and ditches must be refilled. The fire site must be left safe and clear, and no belongings should be left behind.

SPIRITUAL LIFE

Perhaps no other feature of camping is so enlightening or rewarding as the spiritual enrichment one gains while living in the great outdoors. In Chapter Two the importance of developing spiritual maturity was discussed, and no other single activity provides such an easy, natural opportunity for this development as does camping. The spiritual enrichment from camping is not something which is learned by study, but is a feeling that must be experienced and which remains a lasting part of you. There is just something inexplicably warm and good about the way you feel after an early morning walk in the woods, a canoe trip down the river in late afternoon, the vesper service on the edge of the lake at sunset, or a quiet campfire under a starlit sky.

Try camping—you'll love it!

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CHAPTER THIRTEEN

Fencing

HISTORY

The first organized fencing schools were those that trained gladiators in Rome, but fencing as a science really developed when gunpowder proved the uselessness of heavy armor. The swords carried by the knights of the Middle Ages were two-handed, and the cutting edge was used by employing heavy, downward strokes. Men soon discovered that the point was deadlier than the edge, so the rapier, a lighter sword, was developed. The rapier was four or five feet long; it was held in the right hand and used offensively only. The fencer carried a dagger or shield in the left hand for defense. The small sword, which could be used for both thrusting and parrying, was developed in the eighteenth century. As time went on, fencing was no longer used by armies, and the saber, or cavalry weapon, was the only one retained for military purposes. Fencing then became restricted to duelling, and, as this practice disappeared, was retained only as a sport.

EQUIPMENT

Foil. The blade is made of steel, quadrilateral in shape, and tapers to a blunt point. The guard is made of steel or aluminum, and is bell shaped. The handle is wooden, shaped to fit the hand, whereas the pommel holds the foil together and offsets the weight of the blade.

Plastron or Chest Protector. The protector should be worn at all times

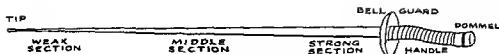


Fig. 45. French Bell Foil.

when fencing. Be careful to pull it high enough around the neck for adequate protection.

Masks. Masks are another must when fencing. Remove your lipstick before putting on a mask.

GRIP AND HAND POSITIONS (Right-Handed Fencers)

The foil should be held lightly by the thumb and index finger about one-eighth of an inch from the guard. The thumb should be placed along the convex side and the index finger against the underneath side. The rest of the fingers close lightly around the handle. There are three basic hand positions:

1. **Normal:** Thumb up position described above.
2. **Pronation:** Back of the hand up, thumb to the left side.
3. **Supination:** Fingers up, thumb to the right side.

PROCEDURES

Salute. Each bout is begun by saluting the opponent and the judges. In the initial position or position of attention the side is turned to the opponent, the feet are at right angles, and the heels are together. Face right. The left arm is extended and is held slightly away from the left side, while the right arm (or foil arm) is extended and is held slightly away from the right side. The arm and foil form a straight line. The foil tip should be about six inches from the

floor. Then raise the foil level with the shoulder and pointed toward the opponent. Pause, and then bend the right elbow so the foil is pointing to the ceiling with the hand level with the chin. Again pause and return to the position of attention.

On Guard (en garde). All offensive and defensive tactics start from the on guard position. Weight of the body should be evenly balanced, trunk erect. The feet should be at right angles, toes pointing straight ahead, weight on the outside borders of the feet, knees directly above the toes. Distance between the feet will vary with individuals. The hand should be in a pronated position centered in the middle of the target, the foil pointing toward the opponent's eyes. The left arm is held at a right angle for balance.

Footwork. The "advance" is used to approach an opponent. It is done from the on guard position. Lift the right foot just off the floor, place it one step forward, heel first (to protect the ankle), then follow with the left foot. Keep the feet in the same relative position as the on guard stance. Do not gallop or slide feet on the floor. Keep the shoulders level, knees bent at all times.

The "retreat" is used to move backward. It is executed just the reverse of the advance.

With the "lunge," you first extend the arm with the hand in normal position; the tip of the foil should be lower than the guard so the foil will bend properly in hitting a target. Second, move the right foot as if to advance. Instead of following with the left foot, keep it in the on guard position, flat on the floor. Extend the left leg, and straighten the left arm. The right knee

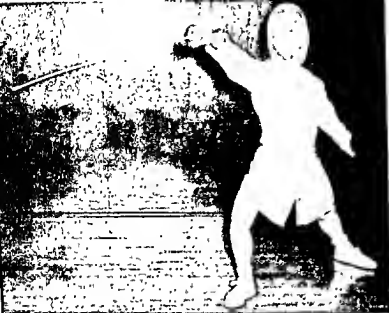


Fig. 46. The Lunge.

should be directly over the right toe. The body should be erect but inclined slightly forward.

"Recovery from the lunge" is done by returning to the on guard position; the knees should be executing movement quickly. Do not rise to a standing position.

Target. The target in foil fencing for women consists of the neck and the torso to the top of the hip bone, front and back, divided into four sections. The foil side is called the "outside," and the non-foil side is called the "inside." The outside and inside are also divided into high and low.

Parries. Parries are defensive movements made with the blade to deflect the opponent's attack. They are of two types: (1) an opposition parry, in which pressure is held against the opponent's foil until a return or riposte is made and (2) a simple beat against the opponent's blade to deflect it away from the line of attack.

1. Parry 4: Protects the high inside area. The hand is held in the normal position and from the on guard position the foil is moved to the left. The foil tip points toward the opponent's eyes, and the guard is at breast height.

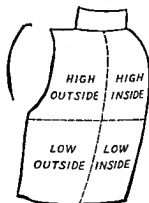
2. Parry 6: Protects the high outside area. With the foil tip higher than the hand

and the hand higher than the elbow, the hand is moved to the right in the position of supination.

3. Parry 2: Protects the low outside area. Swing the tip of the foil in a semicircle counterclockwise, catching the opponent's blade as the circle is completed. At the completion of the parry the hand is in the position of pronation, with the foil tip pointing toward opponent's knees.

4. Parry 7: Protects the low inside area. Swing the tip of the foil in a semicircle clockwise, catching the opponent's blade as the circle is completed. At the completion of the parry, the hand is in the position of

Fig. 47. The Target.



supination with the foil tip pointing toward the opponent's knees.

Attacks. A good touch in fencing must (a) land on the target and (b) "stick" on the target sufficiently long to inflict a wound in actual combat. The touch must be made with the tip of the foil.

1. Simple (direct) thrust: A simple extension of the arm combined with a lunge in middle distance.

2. Simple feint: A feint implies a false attack. A false thrust is made against the opponent, forcing him to close that line with a parry. As he moves to parry, he leaves an opening in another line. The tip of the foil is then dropped under his arm and a real thrust made in the opening. The feint to be successful must appear like a real thrust, forcing the opponent to parry. In dropping the tip of the foil, use only the finger tips, keeping the arm extended and the movement small. Execute the feint smoothly, coordinating the hand, eye, and feet. Timing is important. Do not let the opponent parry the feint—he can use a return in this case. Lunge with the second movement.

3. 1-2 attack: This attack is a combination of two feints. In other words, it is a double feint. In continuing the simple feint, the opponent moves back to parry the second thrust. The tip of the foil must again be dropped over or under his arm to execute a valid touch with the third thrust. Again, the lunge is saved for the last movement. In executing this attack, try to move in successfully farther with each movement. Use the finger tips, keep the arm extended throughout, and keep movement to a minimum.

The Return or Riposte. After parrying an opponent's attack, a thrust can be made against his target with or without a lunge. This is called a "return," but it must be executed immediately following the parry before the opponent can collect himself again. The return should be quick, smooth,

and directed toward the nearest opening, depending on which parry has been completed. It can be especially effective with an opponent who has a slow recovery from a lunge.

ROUTING

The bout in fencing is the combat between two fencers for touches. It takes place on the fencing strip, and in women's fencing the bout is awarded to the combatant first scoring four touches on her opponent. The officials are arranged around the strip as shown on page 128.

The director is in charge of the bout and calls upon the judges for touches. Judges X and O watch contestant B's target. Judges Y and Z watch contestant A's target. Both the judges and director move up and down the forty-foot strip, maintaining the above relative positions as the bout progresses.

Starting the Bout. The contestants salute the director, judges, and each other. The director starts the bout by saying, "Cross your foils over the center line, step back, and fence." The contestants fence until the director calls, "Halt." The director usually calls the halt whenever she sees a judge raise a hand signifying that either a touch or foul has been made.

Rules of Bouting. If a touch is made, fencers go back to the center line again. In the case of a foul, they cross foils at the point where the foul occurred. For a good touch, the tip of the foil must land on the valid target with sufficient force to bend the weak part of the blade. A slap or graze is not a good touch. In the case of a double (simultaneous) touch, the director must decide who had the right of way (initiated the attack) and give that person the touch. If she cannot decide, she calls, "Nothing done." "Cross foils, step back, and fence" is called at the point where the action oc-

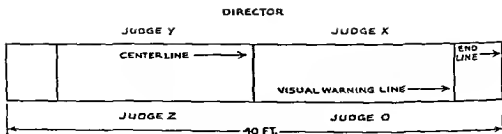


Fig. 49. Fencing Strip.

curred. If the person with the right of way lands a touch on foul territory, the director calls, "Nothing done." If a fencer is forced off her own end line, an automatic touch is awarded her opponent. Fencers only reverse positions on the strip after two touches have been scored. The time limit for women is 8 minutes. The winner is the first one to score 4 touches.

Voting in Bouts. When the director asks for the decisions of judges in a controversial touch, each judge's vote counts "one," the director's, "one-and-one-half." An abstaining vote counts nothing.

Simple Bouting Tactics

1. Plan your attack. Wildly slashing at an opponent's blade accomplishes nothing and leaves you yourself open.
2. Keep your arm extended throughout simple feints and 1-2 attacks.
3. Keep your parries under control and in good form. If an opponent can get you to parry wide, she has an excellent chance of executing feints.
4. Try to attack a person on her approach, not her retreat.
5. If a person stands motionless in the on guard position, wait to attack until you have forced her to parry feints or beat feints.
6. If your attack fails, return quickly to the on guard position. Do not bemoan your fate while remaining in a lunge. You will be touched with a return.
7. Find your opponent's weakness, and attack in that line.

8. 1-2 attacks in a low line are not as effective against an opponent who has good low line parries. He has the shorter distance to move.
9. Good timing is more important than force.
10. Keep your footwork smooth, quick, and well coordinated.
11. Always lunge with a straight arm.

SAFETY

When attention is given to the care and use of equipment and to careful procedures, fencing is a safe sport. The fencer takes pride in her equipment and checks it often. The mask should be in good repair and have a clean detachable bib. Jackets and plastrons can be made of material suitable for frequent cleaning and rips or tears quickly sewed. Broken or lost buttons should be replaced as soon as possible.

The foil may get brittle, scratched, or rough and lose its tip. Replace the blade every few years and use sand paper or steel wool to smooth it. Adhesive tape or rubber tips are used to blunt the point. Discard broken tips or blades rather than use them in shortened condition. Wearing a glove long enough to cover the sleeve cuff will protect the hand and wrist. The foil is carried with the point down or with one hand protecting its tip. Be sure to wear adequate protection during practice sessions and bouts!

GLOSSARY OF TERMS

Call: Method of signaling your desire to take time out and is executed by stamping the right foot twice.

On guard: Position from which all offensive and defensive tactics start.

Line of engagement: Side on which the blades are crossed and in contact.

Parry: Defensive movements of the foil to prevent opponent from making a touch.

Right of way: The privilege of attacking and is awarded to the fencer who first extends the foil arm.

Riposte: Return thrust executed at the completion of a successful parry.

Salute: Method of acknowledging opponent and judges.

Touch: Made when fencer's foil legally touches any part of his opponent's target.

Touche: Term used to signify that a legal touch has been made.

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Field Hockey

HISTORY

The early Irish called it "hurley"; the Scots, "shinty"; the Londoners, "hackey"; and the Welshmen, "bandy." Before the 1800's, the game of hockey was a most vigorous one! The ball was rubber but cut in angles so that it would not bounce equally. The implements were oak sticks with lead inserted at the tips to give added driving power. A goal could be scored from anywhere on the field, which had no limits except goal lines. If a player obstructed, it was permissible to strike him across the shins, and the following up player "could apply kindly but hurtful attention in the same way."

Women formed teams in 1885 at the women's colleges of Oxford and Cambridge. In 1886, the Hockey Association was formed in England, and the striking circle was adopted in the rules. Hockey rapidly spread to many countries of the world, and was first played in the United States in 1900 when a visiting English team played a Staten Island team composed of English women. In 1901, Miss Constance M. K. Applebee, from England, demonstrated the game at the Harvard summer school, and following that she was invited to coach at several of the eastern women's colleges. In 1952, the United States Field Hockey Association honored Miss Applebee for her fifty years as the prime factor in the interest and spread of American hockey.

In 1922, the United States Field Hockey Association was organized for the women players out of high school who had formed clubs and teams



Fig. 50. Hockey Stick.

hand grip. Select a lighter stick for forward play; a heavier one for back or goalie play. Sticks are made with one side flat for hitting the ball and are designed for right-handed players. The stick may be cleaned with linseed oil or stick wax often and its rough edges smoothed with sandpaper and tape.

Ball. Similar to the English cricket ball, it is made of cork, string, and is leather covered. The Chungford ball may also be used in games. Other kinds of balls may be used for practice but are not permitted in regulation games. Balls may be washed and painted white for games, painted yellow or red for practice or snowy fields.

Additional Equipment. This includes guards for the shins and ankles, hockey shoes with rubber or leather cleats, eye glass guards, and pinnies for distinguishing teams. The goal keeper, who has kicking privileges, should wear thigh-high goal pads, kick pads, box toe shoes, and heavy socks.

TECHNIQUES

Hockey, Soccer, Speedball, Fieldball, and Speedaway, all vigorous field sports for women, are related to each other as well as to other sports in their many techniques. All involve certain concepts which, if discovered in one game, can be carried to another. These are ball games and the team with the ball is on the attack or offense; the team trying to regain the ball or to prevent the scoring of a goal is on the defense. Can you shift readily from one to the other? Can you figure out what your job is and what action your opponent

will take? As you play these team games, you learn what to expect from teammates in varying situations, as well as how to follow the ball action. Can you cover the space allotted to your position? Do you know the angles at which positioning yourself will protect the most space or open up the most for your teammates' passes?

Not only are team concepts related, but the feeling for movement patterns and the specific skills are similar from one game to the next. Can you recognize these through your participation by sensing the muscle action? Do you have a variety of movement experiences as well as movement principles that you can apply? Can you run freely and get moving fast on the straightaway, in tackling and back tackling, in sharp turns, dodges, and feints? Can you handle yourself, your stick, and the ball, and control them on the fly or with finesse in a variety of strokes? A "team" is truly the sum total of the individual skills which it contains!

STROKING

The stick is grasped with the left hand near the top of the handle; the right hand is directly below, adjusting down or up the stick slightly—depending on the stroke used.

The Dribble. In dribbling, the stick maneuvers the ball with a series of small taps controlling the ball close to the stick, well ahead, and slightly to the right. As the player runs faster, the ball may be sent farther ahead in an open or loose dribble.

The Drive. For longer passes or goal shooting more force is needed. Holding the stick with bands close, the drive is made with an easy low swing of the stick and a strong stepping forward with the left or right foot on the transfer of weight. For a straight drive, the ball should be slightly ahead and to the right of the forward foot; for a right drive, the ball should be played



Fig. 51. Stopping the Ball.

from a position to the right and slightly to the rear of the right foot.

Fielding. Running to stop the ball, one foot should be well forward with the stick held well ahead, hands separated, and the stick to the ground. The ball is stopped by being trapped or by giving with the blade to prevent rebounding. Immediately the ball is placed in position for further play.

The Push-Pass. A short accurate pass can be made by pushing the ball off (keeping contact with the ball without doing a

preparatory swing) either foot. The hands are separated, with the right hand serving as a fulcrum as the left hand pulls slightly backward.

The Flick. Additional impetus to a push-pass may be given by sharply snapping the wrists and turning the stick toe to the left as the blade lifts the ball slightly off the ground.

The Scoop. The ball may be lifted in the air or over an opponent's stick by placing the toe of the stick under the ball and lowering the left hand—the right hand serves as a fulcrum.

TACKLING

Straight Tackle. In this, the player tackles the player approaching with the ball and meets her directly in front. Keeping her body to the left, she stops the ball just as it leaves her opponent's stick—and quickly moves on.

Circular Tackle. The player without the ball is on the opponent's left. She runs a stride or two ahead, circles to her right in front of the dribbler, secures the ball, and, as she keeps it between herself and her opponent with small taps, she completes the turn in a clockwise direction until headed back toward her own goal.

Left-Hand Lunge. The player tackles her opponent on her left. The stick is held in a



Fig. 52. The Follow-through.



Fig. 53. The Left-hand Lunge.

horizontal carrying position. As the player lunges to the left side on a line with the dribbler, she sharply propels the stick from her right hand to a wide reach with the left hand, ahead of the ball. The right foot quickly steps forward, the body turns, the right hand returns to the stick, and the ball is controlled to move on in the opposite direction. This stroke may also be used to redirect the ball or deflect it into a pass without stopping it.

DODGING

Dodge-to-Right. To evade a straight tackle, the player with the ball may pass close to the non-stick side of her opponent, run to her own left past the opponent's stick side, and recover the ball behind the opponent. The value of this dodge is in its unexpectedness; therefore, the player should know several dodges to vary her play.

Dodge-to-Left. In this, the dribbler, approaching a tackler, quickly moves to her left, while drawing the ball a few inches in that direction, and then quickly proceeds straight ahead. This may also be done to the right.

Diagonal Pass. The ball is passed from one forward to another and back to the first player, who has run past her opponent.

BULLY

To put the ball in play, two opposing players face each other and the sidelines. (All other players are on side.) Keeping the hands separated on the stick and the knees slightly bent, the players touch their sticks alternately to the ground beside the ball and together over the ball three times before the ball may be played and the players move.

ROLL-IN

After the ball is hit out of bounds at the side line, the opponent of the last player to touch the ball in bounds takes a roll-in. She stands outside the field at the point where the ball went out and, holding her stick in one hand, bowls or rolls the ball onto the field, thereby touching the ground within three feet. All players must remain out of the alley until the ball strikes the ground.

FREE HIT

Whenever a foul is made, except by the defense in the circle, the ball is put into play on the spot of the foul by an opposing player taking a free hit. The ball must be motionless and other players five yards

Fig. 54. The Bully.



away. Any legal stroke may be made. When awarded the free hit in the circle, a player may play it from anywhere on the circle.

GAME ETIQUETTE

1. Warm up before playing. Be sure to encourage similar practice for your goalkeeper and other players.
2. Introduce yourself to your opponent on the field or before playing. Thank her, the captains, and the umpires after the game.
3. Wear eye guards if you wear glasses, and shin guards. Your opponent will feel more secure if you are protected!
4. The playing rules do not specify a uniform but it is wise to have your team members dress alike in tunics or shorts. You will play better together and will aid the umpire in her officiating. The use of pinnies is also recommended for distinguishing teams.
5. Keep your stick sanded and taped so that it is free of splinters or sharp edges.
6. Perfect your stickwork and footwork. Fouls are largely the result of faults in these two areas.
7. It is customary for the two team captains to meet with the umpires before the game. After tossing a coin, the captain winning the toss chooses the goal her team shall defend.
8. Develop your endurance. Do not conduct practice periods through the fatigue point. Accidents are caused when players are not in condition or are tired.
9. Play well at all times. Do not be satisfied with mediocre individual or team play.
10. Play until the umpire blows her whistle. Do not officiate your own play!
11. Move fast to take roll-ins and free hits.

12. Notify the umpire and opposing captains when you are playing with fewer than eleven players. Also notify them when one of the backs has goalkeeping privileges.
13. Keep the hockey balls painted white. When snow is on the ground colored balls can be better seen. Color or initial the practice balls to be used at play days or sport days so that you may easily distinguish them from those of other teams.
14. Applaud good plays—never cheer a foul that has been called on either team.
15. On play days or sports days make every effort to meet other players. Join in the social activities planned for you. These events will be among your best experiences.
16. Study the rules often and volunteer to officiate. In this way you will learn the game better and will appreciate the help of officials who coach your games. Each team should develop at least one umpire to assist in matches.
17. There is no professionalism in hockey. In fact, the United States Field Hockey Association discourages competition for cups or prizes.

GLOSSARY OF TERMS

Attacking team: Team in possession of the ball.

Clearing: A hard drive or goalkeeper's kick passing the ball out of the goal area toward the side lines or on the long diagonal of the field.

Corner (long): Free hit taken by the attacking wing five yards from the corner on the goal line or side line when the ball has been hit over the end line by the defense. Six of the defending team must be behind the goal lines, remaining members beyond the

25-yard line. The attacking team is outside the circle, and the four remaining forwards are distributed around the circle to attempt stopping the ball and driving for goal.

Corner (penalty or short): Same as for the long corner, only the ball is hit from a point on the goal line not less than ten yards from the nearer goal post.

Covering: When well behind the play, this is dropping back and near the center of the field to intercept long, through passes. As play approaches the circle, all defense players mark closely and do not cover.

Defense: The team not in possession of the ball.

Dodging: Evading an opponent and continuing in possession of the ball.

Drawing: Keeping possession of the ball and moving slightly out of position to the left or right to force the marking player to follow.

Fouls: Advancing—Pushing, throwing, kicking, or carrying ball in any direction, the same player or a teammate playing it again before an opponent. Dangerous hitting—Undercutting or lofting the ball.

Handling opponent—Tripping, shoving, charging, pushing, or in any way causing personal contact.

Obstruction—Running between an opponent and the ball, or placing any part of the body between the ball and an opponent.

Offside—Gaining an advantage by being nearer the opponents' goal than the ball when it is played by a teammate, unless the player is in her own half field, or unless there are three opponents between her and the goal line. Playing the stick—Hooking, holding, or interfering in any way with the opponent's stick.

Sticks—Raising any part of stick

above the shoulders. This includes the backward and forward swing of the stick in stroking, as well as lifting the stick vertically.

Undercutting—Striking the ball by laying the blade back and causing the ball to rise dangerously.

Goal: A goal is scored when the ball has been hit or touched from inside the striking circle by an attacking player, and crosses the goal line between the posts. Each goal counts one point.

Goal Cage: Posts seven feet high and four yards apart on the goal line, the back of which is enclosed by a net.

Jab or job: A spoiling stroke in which the ball is prodded out of reach of the dribbler by the opponent's stick blade.

Marking: Guarding an attacking player by playing close to her and between her and the goal.

Offense: Attacking team or team in possession of the ball.

Out of bounds: Ball passing over the sidelines for which a roll-in is taken; passing over the end line (1) by the defense, a corner hit is taken; (2) by the attack, a 25-yard bully is taken.

Penalty-bully: Bully taken five yards from center of goal in the circle for deliberate, repeated, or willful breach of rules by the defense in the circle. This concerns only the two players involved; all others should be beyond the 25-yard line until the penalty-bully play has terminated.

Picking up a pass: Receiving a pass from behind while facing the opponent's goal and looking back at the ball over the shoulder. The pass, rather than being stopped, should be deflected forward.

Stick: The weight ranges between eighteen and twenty ounces; the length, between thirty-five and thirty-eight inches.

Tackling back: Player quickly tackling her marking opponent who has just taken the ball from her.

Through pass: Pass going through an open-

ing in the forward line or through the opposing backs so that a forward can pick up the pass. Usually aimed at either corner of the field.

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CHAPTER FIFTEEN

Golf

HISTORY

Many centuries ago shepherds, as a form of recreation, hit stones with their crooks. This probably was the first form of golf. Caesar's soldiers were impressed with the challenge and took the game throughout Britain. Much later the Scottish became interested and developed the technique and equipment. St. Andrews Golf Course in Scotland is the father of golf courses and a round on its rolling greens is the goal of golfdom's most avid devotees.

Golf for women was introduced by Mary, Queen of Scots, thereby eliminating the great uphill struggle most women experience trying to enter into competition with men. She used an Army Cadet to carry her clubs, introducing the world to the "caddy."

Golf was brought to the United States in 1880 by a Scot named Reid. It was a game which at first belonged only to the rich; but today, with introduction of public courses and more reasonably priced equipment, anyone can play. There are no limitations to size, age, weight, or strength. Groups of handicapped players have even formed leagues. Today golf is the leader in outdoor participation sports.

THE GAME

Golf is a game played outdoors preferably on a rolling, tree-studded

terrain. A golf course may be either 9 or 18 holes in length with the usual distance of each hole measuring between 100 and 500 yards. The golfer begins at the teeing ground, drives the ball along the fairway (attempting to avoid hazards such as wooded areas, water, rough ground and sand traps) to the green, where it is putted into the cup. The purpose of the game is to see how few strokes it takes to complete a round of the course.

To golf you are your own competitor, attempting each time to better your own score. Because of this, golf provides a perfect opportunity for self testing, developing patience and perseverance.

EQUIPMENT

Woods. These include number 1 (driver), number 2 (brassie), number 3 (spoon), and number 4.

Irons. These are numbered 1 (driving iron), 2, 3, 4, 5, 6, 7, 8, 9, and 10 which is the putter.

The club heads vary in slant. The driver is flat or almost parallel to the club shaft and each club head through the #9 iron has

more of an angle—thus giving a different flight to the ball. The longest, straightest hit is from the tee. Therefore, the driver with a closed or flat club head is used. As the player progresses up the fairway a shorter and higher arc is necessary; hence, each club head is gradually opened or slanted.

Many good bargains in second-hand clubs can be found at the pro shop at your local course. When purchasing clubs discuss it with a knowledgeable person. The length and weight of the clubs should be individually fitted.

A minimum and yet sufficient set of clubs for beginners consists of number 1 and 3 woods, 5, 7, and 9 irons, and a putter.

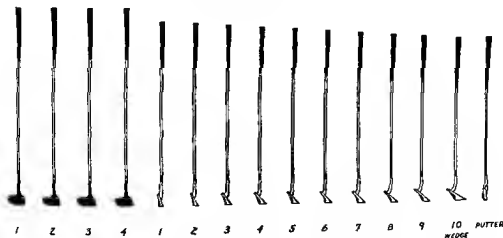
Bag. This is made in a variety of materials, canvas (called a "Sunday bag"), plastic, leather and so on.

Balls. Rubber or liquid center balls are the best, as they give the truest flight and longest distance.

Tees. The most commonly used are wood or plastic pegs. Rubber tees with a weighted tail are acceptable for use at a hard dry tee.

Glove. This is not necessary except that

Fig. 55. Woods and Irons.



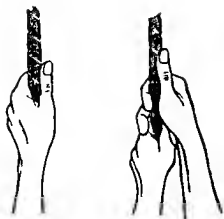


Fig. 56. Assuming Grip.

it saves the hands from blisters and on hot days helps to keep the hands from slipping.

"Spikes." This term is used to speak of golf shoes. Spikes keep the golfer from slipping on the grass.

TECHNIQUES

THE GRIP

Overlapping. To assume this grip allow the shaft of the club to lie diagonally across the left hand. Close the fingers and

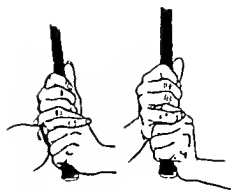


Fig. 57. Left: Interlocking Grip. Right: Overlapping Grip.

permit the left thumb to point down the outside of the shaft, thus forming a V with the thumb and forefinger. This V points over the right shoulder. The right hand is then placed on the shaft so that the palm covers the left thumb and the right little finger overlaps the left index finger. Another V is formed by the right index finger and thumb and also points over the right shoulder. Swing the club back and forth several times until the grip becomes more comfortable. The left hand should hold the club while the right hand directs it.

Interlocking. This grip is similar to the

Fig. 58. Closed Stance. Square Stance. Open Stance.





Fig. 59. The Address.

overlapping except that the forefinger of the left hand and the little finger of the right hand are interlocked or hooked together. Again the V's should point over the right shoulder.

THE STANCE

Open. The left foot is drawn back slightly from the line of direction.

Closed. The right foot is drawn back slightly from the line of direction.

Square. Both feet are even with the line of direction.

PLAYING THE BALL

For the woods the ball is nearer the left

heel and instep. For the irons move the ball nearer the right foot as the clubs become more slanted.

ADDRESS

This is the same for all clubs, except the putter, the use of which is individualized. The weight is evenly distributed. The arms hang relaxed from the shoulder, with the club an extension of the left arm. Slightly bend at the waist, knees relaxed. The left arm is straight. The ball is placed squarely in the center of the clubhead.

SWINGING THE WOODS

Backswing. Move the clubhead along the ground toward the right foot. The weight shift begins at the same time, rolling the left foot and knee inward as the hips and shoulders rotate with the club and arms. As the clubhead passes the right foot the wrists begin to cock lifting the clubhead. Continue rotating the hips with the eyes still on the ball until the shaft of the club is almost horizontal behind the head. Now check these points: the wrists are cocked, both hands are firmly on the club (especially check the fingers of the left hand), left arm is straight but not stiff, eyes are on the ball, still a slight bend at the waist,

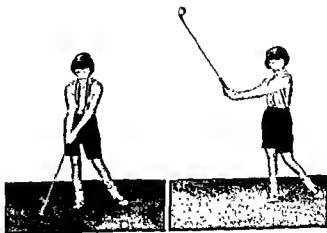


Fig. 60. The Backswing.

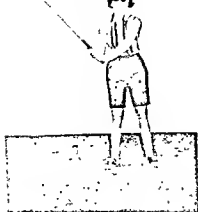


Fig. 61.
The Downswing.



weight primarily on the right foot with the left foot and knee rotated inward.

Downswing. Bring the club down along the exact path it went up. Keep the wrists cocked and shift the weight back toward the left. As the wrists come past the right foot straighten them. When the clubhead comes in contact with the ball, use the right hand as the guide and carry it all out past the left foot and on up until the arms are almost straight. Relax the wrists. The weight has returned to the left foot with the hips pointing in the line of direction. Now you may look up.

SWINGING THE IRONS

When using the medium irons the open stance is assumed. This will turn you slightly toward the hole and your right foot will be closer to the ball. The swing is the same except for a shortened backswing and follow through. The closed stance is used for the short irons with the feet closer together. Again the swing is the same but shorter. Remember: the shorter the swing the shorter the shot.

PUTTING

Without good putting the best driving and fairway play can be lost. Putting is highly individualized. Many golfers use a reverse overlap grip; that is, the left index finger overlaps the little finger of the right hand. The stance brings the feet closer together and nearer the ball than with the other clubs. The knees should be comfortably bent and the head and hands directly over the ball. This places you in a position to stroke rather than to hit the ball.

Accurate putting demands concentration and study. Each putt is different; no set rule can be applied. Allowances have to be made for the roll of the green, the wetness or dryness of the ground, length of

grass and so on. Therefore skill can only be developed by much practice. Every course has a practice green; use it as often as possible.

GUIDE FOR CLUB USE

Woods

Driver—off the tee

#2—fairway, good lie

#3—fairway, ball close to ground

#4—fairway, when a quick rise is desired

Irons

#1—Off tee. Some golfers prefer a driving iron to a wood.

#2—165-190 yards. This club can get down in the grass and give distance, too.

#3—150-165 yards. Gets into the grass like #2.

#4—140-150 yards

#5—130-140 yards

#6—100-130 yards. The 4, 5, and 6 irons are good for close lies or out of the rough where elevation is needed.

#7—100-120 yards.

#8—80-100 yards. These are pitching clubs. They give a quick rise and little roll.

#9—Gives a short high chip to the green or with a full swing can get the ball up and over a bunker or hill.

#10—Putter. Closed face for stroking the ball into the hole.

GOOD POINTERS

1. Golf takes a great deal of practice. This need not always be done on a golf course but at a driving range or in the back yard.

2. Use plastic balls at home. If hit correctly they go straight with little distance or damage.

3. The swing is very rhythmical. Practice with music. Pull back-two-three and

swing down-two-three. Pause slightly at the top of the back swing and hold the follow through.

4. Use a rug, can, yard chair or similar target to practice short chip shots.

5. Above all, keep your eye on the ball. This is the most common need of golfers and no matter how fine the swing, if the player looks up too soon, the ball will not be well hit.

6. Get on the golf course as often as possible.

7. Always "play it safe" on the course. For example, if your ball is behind an obstacle chip out sideways and then onto the fairway rather than hoping you can curve your ball around the obstacle.

RULES OF THE GAME

The Official Rules of Golf, established by the United States Golf Association, are available from that organization (40 East 38th St., New York 16, N.Y.) for \$.25 per copy.

SCORING

1. Par is a perfect score for a hole, arbitrarily determined by the yardage and allowing two strokes on each putting green. The yardage of the hole is the most important factor in determining its par.

2. A birdie is one under par.

3. An eagle is two under par.

4. A bogey is one over par.

5. Both players having the same score on a hole have "halved" it.

6. In match play, one side is said to be "dormie" when it is as many holes ahead as there are holes left to be played.

7. A handicap is the allowance made, by strokes or holes, to equalize the score of players of unequal ability.

8. A match play is a tournament play

in which the final score is determined by holes won.

9. A medal play is a tournament play in which the final score is determined by total strokes.

ETIQUETTE

1. On the tee: Always tee off behind the tee marker. The person with the honor (lowest score on previous hole) drives off first. Do not talk or move around while another person is driving. Wait until previous players have played second shot before driving.

2. On the fairway: The person who is away (farthest from the hole) plays first. Never stand in line of another's shot. If the ball is lost, signal waiting players to go through. Everyone should help hunt for lost balls. Replace all divots. Do not take approach shots until players ahead are off the green. Call "Fore" if your ball goes near another player.

3. In the sand trap: Leave bag at the edge of the sand trap. Smooth over the sand trap after leaving it.

4. On the green: Leave your bag at the edge of the green. The player away putts first. Do not damage the edge of the cup with the flag. Do not stand in the line of another's putt. Leave the green immediately after holing out. Do not drop the flag on the green while playing putts.

GLOSSARY OF TERMS

Address: The act of getting ready to hit the ball; it includes stance, grip, and so forth.

Away: The person who is the farthest distance from the hole is "away," and shoots first.

Fairway: The short, cut grass portion of a course between a tree and green.

Flag or pin: A flag or pennant, mounted on a pole and placed in the cup to denote the number and position of the hole.

Fore: The warning signal in golf. Whenever the ball is going in the direction of a player, call out "Fore."

Foursome: Four people playing together.

Green: The putting ground surrounding the hole.

Hazard: A general term for bunker, sand trap, long grass, road, water, weeds, molehills, or other bad ground.

Hole-out: Finish the hole by hitting the ball into the cup.

Honor: Person who has won the last hole starts first. He has the honor.

Hook or pull: A ball that starts out straight for the hole and then swerves to the left.

Lie: The position of the ball on the ground.

Line of flight: The path of the ball through the air.

Rough: Long grass on either side of the course.

Slice or fade: A ball that starts out straight for the hole and then swerves to the right.

Stymie: One ball interfering with another on its way to the cup on the putting green. Used only in a match play.

Tee: The small elevation on which the ball is placed for the first stroke or drive. Also the first part of each fairway, from which the drive is made.

"Through the green": Any part of the golf course, whether it is the rough or the fairway.

Trap: The sandy hazards placed around the fairway and green.

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CHAPTER SIXTEEN

Riding

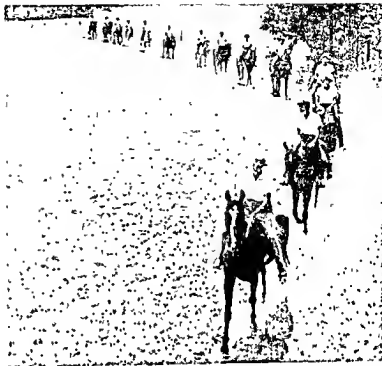
HISTORY

Through the centuries the horse has been a companion to man, and one of the animals most useful in the advance of civilization. Man, whether warrior, farmer, or traveller, has been able to adapt and control the horse to serve his needs. Since prehistoric times man has ridden horses, and through the centuries has depended on the horse as a means of transportation as well as a beast of burden. Men have spent lifetimes perfecting methods of training and schooling in horsemanship, so that it is a genuine part of our heritage.

The art of riding has been highly valued since the time of the Greeks. Xenophon's writings on training and riding in 400 B.C. are not obsolete even today. The vigor of the horseman influenced civilization: yet war provided the impetus for and medium of improvement in horsemanship. Philip of Macedon (382-336 B.C.), for instance, stressed and improved cavalry warfare. Alexander the Great, Philip's son, "was undoubtedly one of the truest horsemen that ever lived. His intelligent use of horses, a skill gained from his father, created one of the greatest empires the world has ever known."¹ Although the Romans were surrounded by nearly all the great horse-raising nations, they did not utilize the horse. Consequently, their footsoldiers often suffered defeat at the hands of enemy cavalry, in spite

¹ Pers Crowell, *Cavalade of American Horses* (New York: McGraw-Hill Book Company, Inc., 1951).

Fig. 62. Trail Riding.



of the over-all success of the Roman army.

Horsemanship became a science in the sixteenth century, when almost every important court of Europe had its School of Equitation (mainly to provide entertainment). In the eighteenth and nineteenth centuries the need for well-trained armies made it necessary for every country to have a school for cavalry officers. The cavalry played an important role in the army and came to be referred to as the "Queen of the Field."

Today our riding differs greatly in location, type of horse, and equipment: from industrial cities' mounted police troops to forest rangers, from colorful hunts and steeplechases to the trail and pack riding on western ranches, and from horse show precision to western rodeo. Even though the horse is no longer used as a mode of practical transportation it is only fitting that "one of the most perfect machines for swift running that exists among living animals"² be utilized in these events as well

as in physical education programs throughout the country.

We often read of the "Horsemen of Yesterday," yet today we find ourselves talking of "horseback riders." Perhaps the difference in the definition of these two terms, horseman and rider, holds the answer to the problem of the proper approach to the "art of riding." The term "rider" is not explicit: anyone who goes on a horse's back may be termed a rider. On the other hand, the term "horseman" implies "the cooperation of two beings,"³ a kind of partnership rather than a "mere mastery of one by the other."⁴ It also implies that the man is more than a passenger on the horse's back. The horseman is a rider who understands the horse and his needs for physical comfort, as well as his needs for training and schooling. Therefore, the approach to the art of riding must be through an effort to develop a horseman.

The perfect lesson in horsemanship

² Captain Vladimir S. Littauer, *Common Sense Horsemanship* (New York: D. Van Nostrand Co. Inc., 1951).

⁴ *Ibid.*

³ Leaflet Guide Series, Number 36, *Evolution of the Horse* (American Museum of Natural History, 1921).

could probably be given by the horse, but since this is obviously not possible, we suggest that the student try to understand the point of view of the horse. The horse and horseman should be able to share the pleasures of the ride. In this way, riding can become a wonderfully healthful form of relaxation, and a sport that can be continued from childhood through the later, more fragile years. "It is not difficult to imagine the horse as man's first source of relaxation and diversion. This companionship has endured through the ages to the present time." *

EQUIPMENT

THE HORSE

A well-mannered horse who is responsive to all the aids is an advantage to the rider regardless of type of breed. It may be either a quarter horse, thoroughbred, or saddle horse. It is easier to learn posting on a horse with a long stride than on one with a short, choppy gait. For this reason, it is best to discourage the use of a pony, even for small children.

SADDLE

The English, or flat, pigskin saddle is used for pleasure riding, bunting, polo, and racing with some slight modification adapted for each purpose. It has a low tree, pommel and cantle; padding, skirts (some with knee pads), buckled girths (usually double), and steel stirrups. A rider is more comfortable in a saddle too large than too small. The stirrup irons, nevertheless, must be the correct size in order not to let the foot slip completely through.

* Pers Crowell, *Cavalcade of American Horses* (New York: McGraw-Hill Book Company, Inc., 1951).

BRIDLE

The English Weymouth riding bridle is most used by instructors. The bridle should fit the horse's head comfortably and allow proper control. The nose band on the bridle should be moderately tight to keep the bit in the proper position and the horse from opening his mouth. The throat latch should be kept sufficiently loose. The bit is one of the most important parts of the riding equipment. It is the instrument that communicates between the hands of the rider and the mouth of the horse. The proper type, fit and adjustment of a bit are essential to the preservation of a "good" mouth. The type of bit used by a beginner is called the snaffle bit. The curb rein should be tied on the horse's neck so that it does not hang loosely and become tangled.

GROOMING TOOLS

The curry comb, dandy brush, body brush, hoof pick, and towel or rub rag are the important tools one needs to properly groom a horse. It is advisable to have a tool box for proper storage and transport.

RIDING RING

The riding ring is a structure 125 feet wide and 250 to 275 feet long, with a wooden fence around it. Drill, exercises, and ring work of all types are the best ways to improve horsemanship. Ring riding can be pleasurable and also offers great opportunity for proper instruction. Trail riding can only be enjoyable after one has a sense of security and control of the horse.

TECHNIQUES

The rider is now ready for her introduction to the stable. At this time, the rider



Fig. 63. Mounting.

becomes aware of some of the horse's physical needs: a well-ventilated, clean stall; proper food; water; and grooming. The previously mentioned equipment is put to use. First, the feet are picked out, the horse is groomed, the saddle placed, and the

girth tightened. Lastly, the bridle is put on. The horse is then led to the mounting area where the girth is checked again by sliding the hand inside it. It should readily admit three or four fingers on the side but should feel tight and snug at the bottom. At this point, the rider learns that all leading, mounting, and dismounting are done from the left or "near" side.

MOUNTING

In mounting the horse, the rider stands beside the horse's left shoulder facing the rear with the reins and mane in the left hand. The right hand is placed on the saddle. The left foot is placed in the stirrup with the toe down. Then, with a hop and a swing, the rider's weight is put into the stirrup and the right leg swung over the saddle. The rider then sits down gently into the middle of the saddle.

DISMOUNTING

There are two schools of thought on dismounting. One school says the right foot comes out of the stirrup and is swung over to the left side. The rider's weight is transferred to the hands, the left foot is taken



Fig. 64. Mounting.

out of the stirrup and the rider lowers her body to the ground dropping on the balls of her feet with slightly bent knees. The alternate method is to have the rider step down with right foot after it is swung over. The rider comes down facing the front of the horse. Emergency dismounts are done in this same manner except that both feet are removed from the stirrups simultaneously, transferring weight to hand so the rider is able to push against the neck of the horse in jumping down.

THE SEAT

Today, in all types of riding most instructors teach the rider to use a "balanced seat" which with slight modifications can be suited to everyone's needs. It has only been in the past few years that there are signs of growing tolerance between those who teach different styles of riding. Margery and Portia Mansfield have said, "The prejudice has been intensified by regional customs, and loyalties have nothing to do with the welfare of the horse and rider." The student who learns the standards of the

balanced seat will be stimulated toward higher degrees of riding. It will be easier to show, hunt, pleasure and trail ride, and participate in other equestrian events. The horse will be a much happier and more efficient partner in the game chosen if he carries a rider whose education has given her a good working position.

The Balanced Seat is the basic body position that enables rider and horse to work together in rhythm, gracefully and comfortably. There is an old saying that "a rider can be judged by his seat." The rider, therefore, should hold herself upright and in a natural position—*shoulders* erect and *head* lifted in line and in balance with the body sitting well down in the middle of the saddle. McTaggart says, "When you are in the saddle, you must sit on your crutch (thigh bones) not upon your buttocks, though nature hath made them for sitting on everywhere else but on horseback." The rider's *knees* must be slightly bent and rolled in, with the inside of the thighs flat against the saddle. The lower part of the *leg* should hang straight down from the knee. Only the toe and the ball of the *foot* should be placed in the stirrup with the

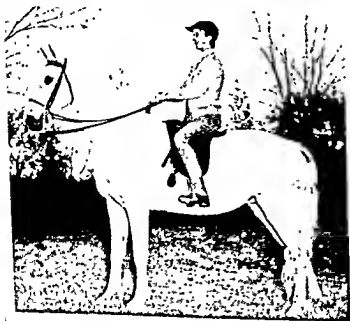


Fig. 65. Position of the Balanced Seat.

heel down and the foot nearly parallel to the horse. By keeping the heels down, the inner calf muscles are brought into play, and it is by these muscles that the aids are given. The stirrup iron should be adjusted to touch the leg just below the ankle when the leg hangs free. Then, if the leg is placed in the stirrup correctly, an imaginary straight line can be drawn from the head through the hip to the heel of the rider.

OTHER PARTS OF THE BODY

The *forearms* (elbows to wrists) are parallel to the ground or level to the horse; in V formation from the rider's view.

The *upperarms* (elbows to shoulders) should fall freely from shoulders toward the hip bones.

The *hands* are held approximately two to three inches in front of the pommel of the saddle and should be separated about the width of the horse's neck.

The *wrists* are rounded slightly, not straight or still, but flexible.

The *palms* are facing downward and slightly turned toward the body.

The *fingers* should be closed over the reins; firm, but not rigid. There should be pressure between the thumb and index finger to secure ends.

The *reins* are usually carried in both hands. The most used rein is on the outside (generally the snaffle); the other (the curb) is between the little and third fingers or third and second fingers. Both reins are under the palms and over the thumbs; the right ends fall nearly down the horse's right shoulder under the reins leading to the bits. Reins should not be twisted. The reins and lower arm combine to make a straight line running from the horse's mouth to the rider's elbow. The hands and fingers must be flexible. The rider must feel the light pressure of the mouth against the bit and yet not hold the reins so tight that the horse becomes upset or irritated. However, the



Fig. 66. Correct Position of the Hands.

slightest movement of the rider's fingers should communicate instructions to the horse. Hands and reins indicate direction and encourage flexibility of the horse's head. All these factors constitute a good balanced seat. In addition the rider must be alert and confident yet relaxed and understanding.

CONTROL OF THE HORSE

AIDS

"A horse's usefulness is in proportion to the completeness of his control" according to D. J. Kays. Proper control of the horse is the next step toward good horsemanship. "Aids" or "controls" as they may best be called are the means by "which the rider physically influences the horse." These natural aids are the hands, body, legs, feet, and voice. The aids are usually used in unison, one assisting or counterbalancing the other. The hands through the reins, control the horse's front legs; the feet and inner calf muscles pressed against



Fig. 67. Riding the Left Diagonal.

the horse's sides control the hind legs. By using both hands and legs, all four of the horse's legs come under control. The snaffle bit is used to guide a horse and to lift or raise his head. The curb bit is useful in collecting the horse so that he may go in balanced and collected form. For example, to make a standing horse walk, you would take up the reins lightly and at the same time press both legs against his sides behind the girth. The same procedure is used at the trot as at the walk—except the reins are shortened and more pressure is exerted with the legs. When you canter a horse always break from a standing position or walk to a canter, never from a trot. If the rider is cantering in a circle to the right, the horse must lead on the right forefoot. To break on the right lead, collect the horse, bend his head slightly to the left, and bear the heel of your right foot against the right side of the horse, well behind the girth. Some horses are trained to a touch on the left shoulder with the rider's left hand.

DIAGONALS

Posting with the *diagonal* is rising and returning to the saddle with the stride or step of one forefoot and the opposite hind foot. Thus, the rider is elevated by the hind foot propulsion to rise with the opposite forefoot, returning to the saddle as the forefoot touches the ground. In posting with the right diagonal the motion of posting is with the right forefoot and left hind foot. To post with the left diagonal the procedure is reversed. The correct, or natural diagonal in a ring is to post with the horse's rail or outside forefoot. This affords the horse and rider better balance and coordination of movements in a ring or circle. To change diagonals the rider sits one beat of the trot and resumes posting, thus throwing his weight on the other haunch and shoulder. For park riding an occasional change is useful and essential to keep the trot of the horse even in stride.

BACKING

In hacking a horse the rider steps the horse forward from the standing position and uses the term, "Back!", drawing evenly on reins, releasing alternately with pressures. No clucking or vigorous use of leg aids is necessary.

HORSEMANSHIP STANDARDS*

Riding is first a matter of confidence and courage, then study and knowledge. A good yardstick to use to analyze your own ability or to classify other riders is as follows:

40%—Rider's basic position (stopped and in motion).

* Annie Lawson Cowgill, Nona Rutland, and Helen Crabtree, "A Standard for Three and Five Gaited Horsemanship."

40%—Skill in use of aids and the way in which the rider makes the horse execute the walk, trot, and canter.

20%—Ringmanship (completeness of control, knowledge of the horse—atomy, tack, and science of equitation).

TO ALL RIDERS . . . BETTER RIDING!

Deep in the saddle is the place for your seat,
Sit erect but relaxed from your head to your feet,

The body is balanced with safety and ease
On a base of seat, thighs, stirrups and knees.

Back hollow, ehin up, waist supple, chest high—
You're beginning to please the most critical eye.

Bend your ankles, toes parallel, press down
with your knees,
You will close on the horse without having to squeeze.

Your arms are extended, your elbows bent slightly,
The hands, thumbs on top, hold the reins lightly.

To signal your mount to go North or go South,
Don't tug-o'-war with his sensitive mouth.

Turn your wrists inward, flex fingers just slightly,
Your horse will obey at once and politely.

As the horse goes, so goes your weight,
The faster the gait, forward slightly the weight.

To be light in the saddle and firm in your seat
Your center of balance and the horse's must meet.

Just back of his withers and under your knees
Is his center of gravity—balance over it,
please! [†]

[†] Ben Lewis, *Better Riding* (New York: Lear Publishers, Inc., 1949). By permission. (3)

GLOSSARY

Balance, Point of: The horse's point of balance is just behind the withers. His ability to carry weight is partially determined by how carefully the rider's weight coincides with his point of balance.

Bight: The seam or buckle where the two reins come together. Also the "left over" between your hands and the ends of the reins—carried on the right side or "off" side.

Breeds: Saddle horses—Arab, Morgan, Standard Bred, American Saddle Horse, Tennessee Walking Horse, Quarter Horse, Thoroughbred. Ponies: Hackney, Shetland, Welsh. Draft—Belgian, Clydesdale, Percheron, Shire, Suffolk.

Cadence: Rhythmical, well-timed, and regular stepping of the horse at a collected gait.

Collection: By using the aids or controls, a rider may either "extend" and stretch out a horse's gait or "collect" the horse by causing the forehand and hindquarters to unite with the horse's legs working closely under his body.

Colors: Black, brown, bay, chestnut, palomino, dun, and gray.

Color Patterns: Roan, piebald (black and white spots), skewbald (spots that are white and any color, but black).

Conformation: The build of a horse.

Contact: The rider establishes a communication with the horse through the reins.

Crop: A stick carried for ordinary riding used as a supplement to the leg aid (not instead of the leg).

Curb bit: A bit with a bar mouthpiece which brings pressure on the bars (back bony section of the lower jaw) of the horse's mouth. Severe measure

used only upon advice of instructor.

Diagonals: A trotting horse moves his legs forward alternately in diagonal pairs. The rider rises and returns to the saddle with the stride or step of one forefoot and the opposite foot of the horse.

Equestrian: One who rides.

Equitation: The art of riding.

Feeding Order: Water, hay, and grain are given always in this sequence.

Foals: Newborn young horses. The female after weaning is called a filly; the male, a colt.

Full Bridle: A bridle composed of two separate bits—a bridoon and a curb—and two sets of reins.

Gelding: A male horse suitable for riding, but not usable for breeding purposes.

Groom: To clean and brush a horse. Tools used include a curry comb, a body brush, a dandy brush, mane and tail comb, hoof pick, soft cloths, and possibly a sweat scraper.

Hacking: A term used generally to describe a horse moving along at his various gaits.

Hackamore: A bitless bridle.

Half Halt: A movement of the hands used to prepare and alert the horse for change of motion or to correct a faulty motion. The bands are pulled slightly and quickly to the rear, but

returned as quickly to the original position.

Hand: A measure used in determining horse size. One hand equals four inches. A horse is measured from the withers to the ground.

Leads: In cantering, the right front or left front foot of the horse strikes the ground first. The "lead" is determined by whichever foot strikes first. In riding in circles, it is important that the inside foot leads to provide support for the horse's body.

Longeing: Teaching or exercising the horse on a long line.

Off side: The right side of a horse.

Pelham: A bit with a bar mouthpiece and double rings on each side.

Serpentine: Is a series of half circles on opposite sides of an imaginary line. Everytime the rider crosses line she changes the diagonal if trotting; the canter lead, if cantering.

Snaffle: A bit jointed in the middle and fitted with one pair of reins. It works entirely on the corners of the horse's mouth. The snaffle is known as the bridoon when used with a curb bit in a full bridle.

Tack: A term meaning the horse's equipment—such as bridle, martingale, saddle, etc.

Transition: A change from one gait or motion to another.

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CHAPTER SEVENTEEN

Soccer

HISTORY

Soccer and its close ally, football, have been played in this country since Colonial times. In the early 1900's, there were two distinct factions; those who used both hands and feet, and those who preferred to use only their feet. From the former, football developed; from the latter, the rules of soccer evolved. These rules have been modified for use by girls and women. Bryn Mawr introduced soccer in its program in 1919. Today it is popular for girls in high school and many colleges throughout this country.

THE GAME

Soccer is a game requiring considerable vigor and stamina. It includes much running, stopping, starting, and turning, as well as kicking. The game is played by two teams of eleven players who line up on the field in the same position assumed by hockey players. One team starts the game with a kick-off. Both teams attempt to legally advance the ball with foot or body down the opponent's half of the field and to score by sending the ball under the crossbar between the goal posts. Four quarters of eight minutes each make up the playing time, at the end of which the team with the higher score wins.

Soccer is a game of teamwork and cooperation. Attacking the goal is important for scoring, and should involve the play of several teammates

working together. Each position requires certain techniques and maneuvers. The forwards' main job is attack. Therefore, they need to be aggressive and have running endurance to carry the ball toward their opponent's goal. They must be alert, think fast, and be skilled in controlling the ball as they rush the goal. Accurate kicking in shooting is important—practice in this is essential! A forward is responsible for her lane running the length of the opponent's half-field. Her teamplay consists of proficiency in this as well as being able to set up and receive passes, change direction of the ball, draw, and score. Their defensive skills must also be strong; a forward needs to tackle back, evade, trap, and run, or change direction. The halfbacks' game is one of continuous offense or defense. They never let up as they cover the whole field in backing up the forwards and in receiving from fullbacks and goalkeeper. They need to develop stamina and skill in all phases of play, including kicking for goal. The right and left halfbacks "cover," as also do the fullbacks. That is, when the

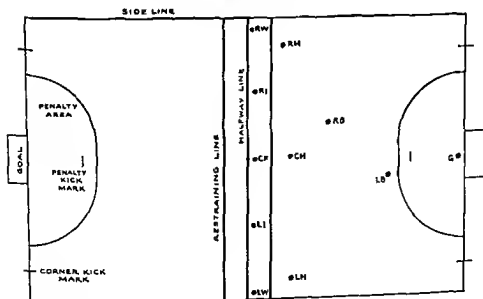
ball is on the right side of the field the left player drops back toward the center of the field; as soon as the play shifts the positions of these two also change. The two fullbacks shift similarly but may remain on defense, only occasionally joining in the attack by crossing into the opponent's half. Also important for the backs are ball handling skills, especially defensive ones that will aid in protecting their own goal. The goalkeeper is usually limited to the penalty area in defending her team's goal and in directing the fullbacks' positions. Additional skills required of the goalkeeper are catching, throwing, punting, and drop kicking.

EQUIPMENT

Tennis Shoes. A player should have tennis shoes with rubber cleats and rubber covered toe.

Shin Guards. Although not essential, shin guards may prove helpful for the beginning players, until they are skilled in ball handling.

Fig. 83. Soccer Field.



Pinnies. To distinguish the teams, these should be worn.

Regulation Soccer Ball. Kept well inflated, and covered with a protective wax, this is the only other piece of equipment needed.

The field is similar in size to a hockey field, and the penalty area in front of each goal is identical to the hockey striking circle.

TECHNIQUES

FOOTWORK

Except for the goalkeeper's play, the game depends upon the use of the legs and feet. Correct balance in approaching the ball, in making contact, and in following through is essential.

Fig. 69. The Punt.



DRIBBLING

This method keeps the ball under control, without breaking stride, while propelling it forward with a series of small taps. The ball is kept slightly ahead, and a tap is made every two or three steps. Both feet should be equally skillful. The ball may also be directed to one side or the other as a method of dodging an oncoming opponent.

Inside-of-Foot. The inner border of the foot with the toes turned out directs the ball straight ahead. Follow-through is made on the foot last tapping the ball but one should be sure to toe straight ahead for the running step.

Outside-of-Foot. The foot is rotated inward and slightly downward, thus making contact with the outside of the foot on the ball. By combining with the inside-of-foot dribble, one becomes more skillful in controlling the ball and in turning.

Toe. This is an advanced skill. The runner toes straight ahead and dribbles by directing the toe under the ball for straight-ahead progress and for a slight backward spin to keep it close.

KICKING

Various types of kicking are employed for passing and scoring. These kicks may be done with either foot from standing or running, and the ball may be motionless or moving. It is important to control the balance before and following the kick and to use the arms for aiding balance.

Inside-of-Foot. One leg is swung, with the knee slightly bent, sideways and backward—in line with the direction of the pass. The kick is made by carrying the leg diagonally across in front of the body extending the knee on contacting the ball with the inner border of the foot. This method

may be used for diagonal passing, shooting, dodging, or place-kicking.

Outside-of-Foot. For a pass diagonally forward to the right, the right leg swings to the left in front of the body with the knee slightly bent and on the return swing forward and outward meets the ball to the right and ahead. Lacking power, this is used as a short pass, quick shot at the goal, place kick, or the beginning of a dodge.

Instep Kick, Top-of-Foot. The kicking leg is swung backward with the knee bent. As one steps, the other leg is brought forward, toe pointing downward, and meets the ball (below its center) with the top of the instep. The knee sharply snaps for a high kick; it remains bent, and the arc is flattened for a low kick. This is used for a long pass or shooting, or may control a moving or bounding ball.

Heel Kick. Timing the run with the ball moving in the same direction, the kicker steps ahead and to the left of the ball, swings the right leg over the top, and quickly swings backward with the heel to propel the ball backward. Practice is needed to develop good timing so that the player does not step on the ball and throw herself.

Toe Kick. This is an advanced skill because of inaccuracy and possible toe injury to the beginner. It consists of stepping to the left of the ball with the left foot and, after swinging the right leg backward, it is swung to meet the ball with the toe. A kick to the center of the ball will keep it low; just under the center, will raise it in flight. This may be used for place kicking, volleying, or a bounding ball.

Punt. Holding the ball in both hands low in front, the goalkeeper steps with the left foot, and brings the right forward to kick. The ball is dropped on the instep of the kicking foot and kicked for height and distance.

Place-Kick. The ball is placed on the ground. The player steps to the left of the



Fig. 70. Trapping.

ball and, after swinging the right leg backward, kicks the ball with the side of the foot, instep, or toe. Skill in kicking from a running approach should also be attained.

Trapping. This is a method of stopping the ball with any part of the body, except hands and arms, and keeping control of it. Proficiency in the use of both legs should be developed. The standing or running position must be resumed immediately to be ready to play the ball.

Inside Lower Leg. One's weight should be supported on the left foot, the right foot placed to the side in line of the oncoming ball; as the knee bends, the lower leg should be held forward to form an angle so that the ball is caught between the foreleg and ground.

Inside Both Legs. The feet are slightly apart, and the knees bend forward and inward to pocket the ball between the ground and the inside of the lower legs.

Front-of-Both-Legs. This is similar to the trap with the inside of legs, but the feet are kept together, and the knees are bent forward and downward to trap the ball between the ground and lower legs.

Sole of Foot. The weight is supported on one foot, and the other knee is lifted with the foot flexed. As the ball meets the heel, the foot is extended, and presses the top of the ball with the sole.

Heel. This is similar to the backward kick. However, the heel is only placed against the ball to stop it, while the player turns quickly to control the ball.

VOLLEYING

To play the ball with any part of the body, except the hands and arms, before it bounces is volleying.

Knee Volley. The body lines up with the oncoming fly ball, one leg lifts forward, the knee bends slightly, and the ball is met with the top of the knee.

Foot Volley. The ball, as it descends, is kicked with the instep, inside, or outside, of one foot.

Half Volley. The ball is played the moment it hits the ground or just as it bounces.

Heading. To volley a ball descending from a fly or high bounce, a jump is made toward the ball, and it is met just above the forehead. The body and neck should extend forcibly on the jump.

BLOCKING

This is used to stop a ball or to place it in a position to control it.

Chest Block. The arms are folded on the chest, and meet the ball in this manner. At the moment of impact, the body should give backward and the trunk bend slightly forward, directing the ball to the ground.

Thigh, Abdomen Block. This is similar to the chest block, but the arms remain free for balance.

TACKLING

This involves securing the ball from an opponent and timing the action when the opponent is not touching the ball.

Straight Tackle. The player approaches her opponent head on and extends one foot well forward to meet the ball, shifting her weight to the other foot and bending the knee. This may be used to block the ball or to block a kick. The ball should be followed or passed immediately.

Hook Tackle. The tackler stands ahead of the opponent and to one side. One leg is extended out to the side, with the inner border of the foot toward the ground. The supporting leg is bent very low to give a good reach. The ball is hooked away from the opponent and quickly passed.

Split Tackle. An advanced skill, this tends to work better as a pass or a spoil tackle. The player drops to one knee and extends the other leg in direction of the ball—she may be ahead of or at the side of her opponent. The ball should be directed by the sole of the foot.

DODGING

This is done to avoid an opponent, while one keeps control of the ball, by drawing her off balance to the left and dodging right or, the reverse—going around her on the left and passing when possible.

PASSING

Quickly sending the ball with either foot into a space ahead of another player is a pass.

TACKLING BACK

A player tackled should immediately attempt to resecure the ball and pass quickly.

SHOOTING

In order to score, the player should kick the ball as soon as within scoring distance, rush the goal, and attempt to score on a follow-up shot.

PICKING UP PASSES

This constitutes intercepting or receiving a pass on the run and directing the ball ahead without stopping the ball.

DRAWING

The attacker dribbling the ball should move away from the direction of her pass in order to coax her opponent to follow.

CENTERING

This is a diagonal pass forward into the scoring area or a flat pass across the goal from the wing player.

GOAL KEEPING

Fielding. The goalkeeper may catch and throw the ball or catch and punt, bat, punch, slap, or kick the ball out of her area.

Punting. The goalkeeper may punt from a standing position after taking one or two steps to clear the ball as far as possible. The weight is carried on one foot, the other swings backward in line of the kick. The ball is held well out in front with elbows slightly bent. As the ball is dropped the leg is swung forward to kick it just before it hits the ground.

GAME ETIQUETTE

1. Warm up before playing. Urge your

teammates, especially the goalkeeper, to practice ahead of time.

2. Meet your opponent before playing time or on the field. Thank her after the game.
3. Be sure to be adequately protected if you wear glasses.
4. Decide on a uniform dress with your teammates. It is also recommended that pinnies be used for distinguishing teams.
5. Develop good ball handling skills and you will have fewer fouls. Try to play well at all times.
6. Practice to increase endurance. The game will seem much more enjoyable after you achieve "second wind"!
7. Be sure the soccer ball is well inflated, clean, and protected with wax. Slightly deflate the ball for heading practice.
8. If you are a team captain, meet with the opposing captain and officials before game time. Decide which goal you will defend by toss of a coin.
9. Notify the umpire and opposing captain if your team is playing with fewer than eleven players or if one of the backs has goalkeeping privileges.
10. After out-of-bounds or goals, obtain the ball quickly and return it directly to the spot indicated by the umpire.
11. Win or lose graciously and without excusing yourself or your team. Thank your opponents.
12. Cheer good plays—never fouls.
13. Accept the decisions of the officials pleasantly and without comment. Learn to officiate so that you may assist at practices and sport days.

GLOSSARY OF TERMS

Attackers: The players in possession of the ball or attempting to make a goal in the opponent's half of the field.

Corner kick: A place kick by an attacking player from a spot on the goal line five yards away from the nearer corner when the ball has been sent over the end line or over the crossbar of the goal by the defense.

Corner-kick marks: Three-foot lines, parallel to the sidelines, drawn across the goal line, and five yards from each corner.

Defenders: The members of the team not possessing the ball, or attempting to prevent the ball from going into their own goal.

Defense kick: A place kick from anywhere on the penalty area quarter circle, by a defending player, when the ball has been sent over the end line or over the crossbar by an attacker.

Disqualification: Suspension from the game by the umpire for unsportsmanlike behavior or roughness.

Drop kick: A kick by the goalkeeper in which the ball is dropped to the ground and kicked just as it leaves the ground.

Field goal: When the ball passes between the goal posts, under the crossbar, after being legally kicked or advanced by the body from any place on the field.

Fouls: Infringements of rules for which a free kick is awarded the opponents or, if foul occurs in the penalty area, a penalty kick is awarded.

Carrying—The goalkeeper taking more than two steps before releasing the ball.

Handling—Using the hand or arm to give impetus to the ball.

Holding—Preventing a player's progress by contact with hand or arm.

Offside—Player gaining an advantage by being nearer her opponent's goal than the ball unless she is in her own half of

the field, or there are three of the defense nearer their goal line than she is.

Pushing—Using hand, arm, or body to contact opposing player.

Tripping—Using legs or body to throw an opponent.

Free kick: Awarded for an infringement of rules by any player outside of the penalty area or by an attacking player inside the penalty area. A place kick is taken by an opponent on the spot where the foul occurred.

Goal posts: The upright posts, six yards apart, at the center of the goal line, with crossbar eight feet from the ground.

Halfway line: The line connecting the midpoints of the two side lines dividing the field into halves.

Kick-in: Place kick from sideline to resume play after an out-of-bounds ball.

Kick-off: The game is started, and play resumed after a goal, by a place kick from the center of the field. The ball must go into the opponent's territory and must roll at least the distance of its circumference before a teammate or opponent may touch it.

Out of bounds: The ball passing entirely over the side line. Play is resumed by an opponent of the team hitting it out, taking a kick-in on the side line—all other players are five yards away. The ball must roll its own circumference before being played by a teammate or opponent. A ball sent out of bounds at the end line or over the crossbar by the attacking team is put in play by a member of the defending team who takes a defense kick anywhere along the quarter circles of the penalty area. A ball sent out of bounds at the end line or over the crossbar by the defending team is put in play by an attacker who takes a corner kick. A

roll-in is taken if the ball is struck out by two opposing players five yards in from the point where the ball went out, unless within five yards of the goal when a roll-in shall be taken at the penalty-kick mark.

Own goal: The goal which a team defends.

Own half field: Section of the field between team's own goal and halfway line.

Penalty areas: Similar to the space enclosed by hockey striking circles—quarter circles drawn with a fifteen-yard radius from a point on the goal line one yard from the goal post (both connected with a line four yards in length, fifteen yards from the goal, and parallel to it).

Penalty kick: A place kick taken from the penalty-kick mark by an attacking player who must kick the ball toward the goal. The goalkeeper may stand on the goal line to defend her goal; all other players must be out of the penalty area.

Penalty-kick marks: Twelve-inch line parallel to each goal line, twelve yards from the center of the goal.

Place kick: Player kicks the ball as it is motionless on the ground—taken in kick-off, defense kick, free kick, corner kick, penalty kick, and kick-in. All other players must be five yards away. The ball must roll the distance of its circumference, after being kicked, before an opponent or teammate may play it.

Punt: A kick by the goalkeeper, who drops the ball and kicks it before it touches the ground.

Restraining lines: Lines drawn five yards from the halfway line and parallel to it.

Roll-in: Rolling of the ball by the umpire, between two opposing players, from a point on the sideline. This is the method of resuming play after a double infringement of the rules, after suspension of time, or after the ball is sent out of bounds by two opposing players.

Scoring: Two points are allowed for a field goal. One point is allowed for a penalty kick.

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CHAPTER EIGHTEEN

Softball

HISTORY

Baseball is a real American game, for the game was born and bred in the United States. The origin of the sport is said to have come from several different games, among them the English games of rounders and cricket. English children have played a game called "Four Corners" for centuries. This is nothing more than "Pussy Wants a Corner," except that the out-player has a small soft ball which he tosses to any one of the players on bases; the player to whom it is tossed strikes at the ball with the open hand, and then, whether or not he hits it, each player must run to the next base. The out-player picks up the ball as quickly as possible and tries to hit a runner with it before he reaches a base. Next, during the time of the Revolution, came the regular use of the bat and the beginning of pitching. By 1890, games had been combined, and the name "baseball" was invented. It should be stressed that the present game of baseball was developed in its entirety in the United States.

Abner Doubleday drew a rough baseball diamond in the dust at Cooperstown, New York, one summer day, in 1839, and the ensuing enthusiasm for the game spread far and wide. However, the branch of baseball known as "softball" was originated at the Farragut Boat Club in Chicago, one Thanksgiving, when an indoor game of baseball was played with a boxing glove and a broom. From this beginning in 1887, the game grew until it is now one of America's favorite sports. George W. Hancock, a member of the club, devised rules and equipment for the game, which in-

cluded a larger, softer ball and a bat with a smaller head. Many names were applied to the game—playground ball, kittenball, ladies' baseball, mush ball, and pumpkin ball—but, finally in 1933, the name of softball was adopted.

In this same year, 1933, the Amateur Softball Association was formed, and the following year it sponsored its first tournament, which drew 1,000 teams. One set of rules was agreed upon, making the game suitable not only for boys and men, but also for girls and women. The game does not deserve to be called a "sissy" game because it is a fast game with the bases closer together, the playing area smaller, and the playing time shorter than in baseball.

There are many famous softball teams in action today, but the real joy and future of the sport lie with the millions of boys and girls who play it in streets, playgrounds, and vacant lots.

THE GAME

Softball is played on a diamond-shaped field by two teams of nine players each. One team is at bat while the other team is in the field. The pitcher of the fielding team throws the ball in an underhand motion to the player of the team at bat. This player or batter attempts to hit the ball, causing it to settle on fair ground and thus permitting her to run around the bases. A run is scored every time a batter legally touches the first three bases and home plate before three players have been put out. The game consists of seven innings.

EQUIPMENT

Ball. The official softball is smooth-seamed and is not less than eleven and seven-eighths inches nor more than twelve and one eighth inches in diameter and

weighs not less than six ounces nor more than six and three-quarter ounces.

Bat. The bat is made of hardwood two and one-eighth inches in diameter at the largest part and is not longer than thirty-four inches. There should be a safety grip of tape or some such composition.

Gloves. Any player may use a glove. The first baseman and catcher wear mitts.

Pitchers Plate. The plate is of wood or rubber, twenty-four inches by six inches, and lies flush with the ground.

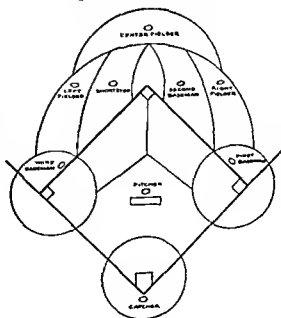
Home plate. The plate is a five sided figure of rubber or other suitable material. Its point fits into the angle made by the base-lines and its long edge faces the pitcher.

Bases. First, second, and third bases are fifteen inches square and made of canvas or other suitable material. They should be securely fastened to the ground.

Mask and body protector. The catcher must wear a mask and a body protector. Players may wear slacks as protection from injury.

Shoes. The soles may be either smooth or have soft or hard rubber cleats.

Fig. 71. Softball Field.



Field. The field is diamond shaped with four bases sixty feet apart. The pitcher's box is thirty-eight feet from the point of home plate.

RULES

Softball rules are the most extensive of all sports. The following are but a few:

BATTING

1. Batting order:
 - (a) Given to umpire at home plate before game.
 - (b) Must be followed throughout the game.
 - (c) Substitutes must take place in the batting order of player removed.
2. A fair hit is when:
 - (a) The ball touches the ground between home and first, or home and third.
 - (b) The ball is in or over outfield.
 - (c) The ball touches first or third base.
 - (d) The ball lands in fair ground, either on or beyond first or third base.
 - (e) The ball hits umpire or player while over fair territory.
3. A foul hit occurs when:
 - (a) The ball settles on foul ground between home and first or home and third base.
 - (b) The ball touches a person who is in foul territory.
 - (c) The ball first touches in foul territory in outfield.
4. An illegally hit ball is a ball hit when either or both of batter's feet are outside the batter's box.
5. A strike occurs in one of the following situations:
 - (a) A ball pitched over home plate between knees and armpits.

- (b) A ball swung at and missed.
 - (c) A foul ball not caught on fly, except on third strike.
 - (d) A foul tip—a ball hit that goes directly to hands of catcher. A ball rising higher than the batter's head is a foul ball (not a foul tip) and, if caught, the batter is out.
 - (e) A ball swung at, missed, and the ball hits the person of the batter.
6. A "ball" is one of these:
- (a) Ball not delivered in strike zone, and not swung at.
 - (b) Pitcher pretends to pitch, but does not (balk).

STRIKE OUT

A player is out if one of the following occurs:

1. Batter—
 - (a) Does not follow batting order.
 - (b) Makes three strikes.
 - (c) Prevents catcher from catching ball.
 - (d) Third strike is foul tip.
 - (e) Bunts foul after two strikes.
 - (f) Is hit by own batted ball.
2. Base runner—
 - (a) If a fair hit ball is caught at first base before runner reaches first.
 - (b) If tagged off base except when overrunning first.
 - (c) If touched by a fair hit ball.
 - (d) If she fails to avoid a fielder attempting to catch a ball.
 - (e) If she does not return to base after a fly ball is caught and before ball reaches that base.
 - (f) If she passes a base runner.
 - (g) If she is forced out.

ADVANCING BASES

1. Batter—
The players of the batting team may at-

tempt to progress around the bases under the following conditions:

- (a) When she makes a hit that lands in fair territory.
 - (b) When the umpire calls four balls.
 - (c) If the catcher interferes with the batter while attempting to hit.
 - (d) When hit by a pitched ball and has attempted to get out of the way.
2. Base runner—
- (a) Batter makes a fair hit.
 - (b) After a fly ball is caught.
 - (c) On an overthrow of first or third (one base) or second base.
 - (d) On a passed ball.

GAME ETIQUETTE

1. Abide by the decisions of the umpire.
2. Avoid delaying the game.
3. Win or lose with good spirit.
4. Acknowledge good plays.
5. Be friendly with your opponents.
6. Play your best at all times and encourage your teammates to do the same.

TECHNIQUES OF THE GAME

BATTING

1. Be ready to hit when standing in the batter's box.
2. Stand erect facing home plate with the feet slightly apart in a comfortable and easy position, opposite the rear corner of the plate.
3. Grasp the bat firmly with both hands at the small end. The left may be at the end or moved up several inches; the right close to the left or up an inch or two. Keep grasp firm but wrists, arms, and shoulders relaxed to permit a free easy swing.

4. Waiting for pitch—bat should be held away from the rear shoulder.

5. Preliminary swing backwards should be from the shoulder with the left elbow held high. Shift your weight back onto the right foot at the same time the backward swing is made.

6. Forward swing—the bat should be swung forward in a horizontal plane with the arms straight, and a step onto the left foot.

7. Follow through and carry the bat past the left shoulder.

BUNTING

1. Grasp the bat and stand as for batting.

2. Meet the ball without swinging by placing the bat over the plate and sliding the fingers of the right hand along the back of the bat to about ten inches from the end. The thumb will be near the top of the bat; the knuckles of the fingers will grasp the lower part of the bat.

3. As the ball is met, "give" so that little force is imparted to the ball. Direct the ball along the first base line or the third base line.

PITCHING

1. The ball is held in a triangle formed by the thumb and first two fingers. The thumb curves over the top of the ball and the fingers curve under it.

2. Back swing—with the palm of the hand facing upward, the arm swings back and to the side of the right hip in preparation for the delivery. Weight is shifted to the right foot, and the body turns to the right.

3. Delivery—swing the fully extended arm down close to the side and forward. Release the ball at a point in front and slightly below the shoulder. As the ball leaves the hand, the weight should be trans-



Fig. 72. Follow-through on Overarm Throw. Start of Pitching Motion. Follow-through in Pitching Motion.

ferred to the left foot for the follow through.

4. Kinds of pitches.

(a) Straight—Pitching ball with thumb and first two fingers, palm up.

(b) Incurve—Ball curves toward right-handed batter. Same grip as straight ball but turning palm up and to the right, releasing ball between thumb and first finger.

(c) Outcurve—Ball curves away from right-handed batter. Same grip as a straight ball, turning palm down and releasing ball between thumb and first finger.

(d) Rise—Ball rises as it nears home plate. Ball held with thumb pointed downward, all fingers on top of ball, gripping with tips of fingers. Knuckles are toward batter and wrist is sharply extended upward with thumb pushing ball to give back spin.

(e) Drop—Ball falls in flight as it nears the plate. Ball held with palm up, thumb right and little finger left, other fingers under the ball. Ball is released with an upward motion, the first three fingers imparting top spin.

2. Overband.

(a) Tripod support.

(b) Elbow well flexed and carried back of and at shoulder level as far as possible. Pivot on ball of right foot, turn the body to the right.

(c) From this position the hand and arm should be carried forward and the ball released after a quick extension of the elbow and wrist, to give the necessary force. Step forward onto the left foot.

3. Side arm throw.

(a) Tripod support.

(b) Flexed elbows should be carried back, behind and below shoulder level, and the hand well away from the side of the body.

(c) Delivery made following an extension of the arm forward through a horizontal plane. Release the ball as the arm reaches its full extension in front.

CATCHING OR FIELDING

THROWING

1. Underhand—same as for the pitch, except that often all four fingers are on the ball.

1. Above the waist.

(a) Hands relaxed and held parallel with the thumbs close together and the fingers pointing upward.

(b) Elbow flexed so the arms and

hands can give slightly with the impact to resist the shock so that the ball will not rebound.

2. Below the waist.

- (a) Hands should be relaxed and parallel, with the fingers pointing downward and the little fingers close together.
- (b) Elbow should be relaxed and give at the moment of impact.
- (c) Assume a forward stride position with the legs close together and the left foot leading. Run up on a ball.

TEAM TACTICS

The batting order often spells the difference between victory and defeat for a good team. Two important positions in the batting order are the "lead-off" and the "clean-up." The former should be able to get on base, and the latter should be able to get a base hit. Other players should be arranged according to ability, with the weak hitters near the end of the batting order.

The sacrifice bunt is used to advance runners already on base. This play must have a prearranged signal and requires close cooperation between the batter and the baserunner.

The hit and run is a safe bet with a hitter at bat and a fast runner on first base. The batter attempts to hit a ground ball behind the runner to right field, through the opening left by the second baseman as he covers the base. Even if the batter swings and misses, the runner is on her way.

Every player should be alert, have her mind on the game, and play her own position.

GLOSSARY OF TERMS

Appeal play: A play in which an umpire

can not make a decision until requested by a player. The appeal must be made before the next pitch.

Assist: To help in any series of plays that result in the put-out of a baserunner or would have resulted in a put-out but for an error by a teammate.

Battery: The pitcher and catcher.

Blocked ball: A ball stopped or handled by someone not officially connected with the game, or a ball that touches an object which is not part of the playing area.

Double: Two-base hit.

Double play: Two successive outs executed during a single play.

Drawing a throw: Faking an advance from one base to the next, thus causing player with the ball to play you while teammate on next base advances.

Error: A misplay by a fielder allowing a base runner to advance or be safe on an otherwise certain out.

Fielder's choice: Base runner rather than batter retired. Choice made by fielder.

Force out: An out made when runner, losing her right to keep her base by batter becoming baserunner, must advance to the next base.

Foul tip: A foul ball which goes sharply and directly into the catcher's hands.

Hot corner: Third base.

Infield fly: A fair hit fly ball in the infield that is caught or could be easily handled by an infielder.

Inning: That time when each team has its turn at bat and in the field.

Keystone sack: Second base.

Lead-off: Leaving base as pitcher releases ball in order to go to next base without loss of time.

Loss: A pitcher is credited with a loss if she is replaced when her team is behind in score and thereafter the team fails to tie or gain the lead.

Overthrow: A ball thrown at first, third, or home to play a runner, and which goes into foul territory.

Passed ball: A pitched ball that catcher should have banded but missed.

Rounding bases: When there is a chance to take two or more bases, runner swings to right before getting to base, cuts in to touch inner corner, and proceeds left to next base.

Safety: One-base hit.

Soft-softball: A ball with padded core and

top grade leather. Its flight is restricted to one-third that of a regulation softball.

Squeeze play: A bunted ball that advances a runner from third base.

Stolen base: A base credited to a runner who has advanced without aid of a play by either team.

Wild pitch: A pitched ball that the catcher can not control with ordinary effort.

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CHAPTER NINETEEN

Speedball

HISTORY

Elmer Mitchell, at the University of Michigan, in 1921, originated speedball for boys, to provide an all-around activity without requiring highly specialized playing skills. The game was quickly accepted and played by boys and girls, men and women, throughout the country. In the early 1930's, a committee sponsored by the National Section on Women's Athletics revised the men's rules, making them suitable for women. Since then, women have promoted speedball and have experimented with the rules, simplified and standardized them, and developed new techniques of play and new methods of presenting them. The game, with its varied techniques and basic elements of major team games, continues today as one of the most popular sports for fall and spring.

THE GAME

Speedball is a vigorous sport and contributes to the development of the player with the running of hockey, the footwork of soccer and football, and the throwing, catching, and jumping of basketball. It is also a sport requiring anticipation, quick thinking, and intelligent decisions on team play, strategy, and scoring.

Two teams of eleven players play on a field 100 yards by 60 yards (this may be decreased for less experienced players). The players and post-

tions are similar to those of soccer. The rules of soccer apply when the ball is on the ground; the rules of basketball, when the ball is on the fly. A ground ball may not be touched with the hands but must be kicked or given impetus by the body. A fly ball (or aerial ball) is one that has not touched the ground at any time since it was last played. It may be caught and then juggled, thrown, punted, or drop-kicked. A ground ball kicked into the air may be converted into an aerial one by any player, including the kicker. Unlike soccer, the goalkeeper has no special privileges, and there is no "offside." A player may not bounce the ball nor run with it.

The game consists of four eight-minute quarters, starting with a kick-off at the center of the halfway line. A score may be made by a field goal, a touchdown, a drop-kick, or a penalty kick.

The five forwards must be fast runners and quick to receive, pass, and dribble. Upon nearing the goal, the center and inners should rush to score a field goal, or to drop-kick. The three halfbacks, sharing offense and defense duties, need much endurance and well-developed skills of kick-

ing and passing. The two fullbacks, as they assist the halfbacks and protect their goal, should excel at long passes and kicks. The goalkeeper must move quickly, reach well, and be fearless in guarding the goal. All should play their own areas, be alert to every opportunity to pass, kick, or score, and anticipate new plays readily. Good team play is essential to the success of the team!

EQUIPMENT

Only two sets of goal posts (protected by padding) and simple markings on the field are needed. A regulation soccer ball is used. Players should be provided with eye guards, shin guards, and sports clothing or pinnies of a distinguishing color. Tennis or leather shoes, which may have added rubber or leather protection at the ankle and toe, should be worn.

TECHNIQUES

In addition to all soccer skills and

Fig. 73. Speedball Field.

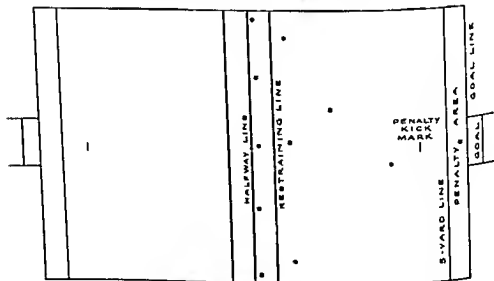




Fig. 74. Kick-up with One Foot.

most of the basketball skills some specific techniques are added for speedball.

KICK-UP

This is the method of converting a ground ball to an aerial one. It must be done swiftly, and, before the ball is caught, either the ball must leave the foot or leg or the foot must leave the ground. The player may lift the ball to herself or to a teammate.

Kick-Up with One Foot on a Stationary Ball. After trapping the ball with the sole of one foot, the player draws the sole over the top of the ball to start it moving toward her. She then inserts the toe under the ball and raises the foot upward, bending the knee and turning it outward. The ball is then grasped in the hands as an aerial ball.

Kick-Up with One Foot on a Rolling Ball. This is the fastest method. As the ball rolls toward the player, she lines herself up with it, extends one leg forward, and points



Fig. 75. Successful Shoulder Block.

the toe under the ball. The ball rolls up the leg to be caught. It must be in the air when caught, or the foot must leave the ground before catching the ball.

Kick-Up of Ball to a Teammate. The kicker places the toe under the ball, bends the knee, and, upon sharply extending the knee, lifts the ball to a teammate.

Kick-Up with Both Feet. This is a very slow method, but may be used when unmarked. The ball is trapped between the feet, and, as the player jumps to lift the ball upward, the player bends forward and reaches downward for the ball. The toes should turn in slightly; the knees should bend outward slightly.

RECEIVING

To catch long hard passes and punts, the ball should be received against the body with the arms (a "football catch"), and the body and arms should "give."

JUGGLING

This is one of the handiest techniques in evading an opponent, maintaining control of the ball, and advancing the ball. The ball is tossed over reach height and ahead, from one or both hands. It is caught by the same player who advances under it or who runs to her left around a guarding opponent.

PASSING

Long passes are recommended to advance the ball fast and to change direction on the defense. The underhand, chest, and shoulder throws are the most useful. They should be practiced on the run and to running players.

MARKING OR GUARDING

It is particularly important for the halfbacks to mark the wings, the center halfback to mark the center forward, and the backs to mark the inners, when a team is on the defensive. A player may guard with arms in any plane as long as no contact is made with the ball or the opponent. Soccer tackling, blocking, or trapping is used to intercept a ground ball.

PLAYER-TO-PLAYER DEFENSE

A method of guarding in which each player closely marks her assigned player whenever on the defense.

ZONE DEFENSE

A method of defense in which defensive players fan out and cover areas of the field

in order to intercept the ball, rather than closely guard particular players.

SCORING**FIELD GOAL**

Two points are allowed. A ground ball is kicked or played by the body so that it passes between the goal posts over the goal line and under the crossbar. It could be also a drop-kick that goes under the crossbar between the posts. It may be scored from anywhere on the field by any player.

DROP-KICK

Three points are allowed. It is scored when an aerial ball is drop-kicked from outside the penalty area over the crossbar and between the goal post uprights.

TOUCHDOWN

Two points are allowed. It is a forward pass made by attacking player on the field outside the penalty area and caught by a teammate behind the goal line (not between the goal posts).

PENALTY-KICK

One point is allowed. It is a drop-kick taken from the penalty-kick mark by the attacking team, for a foul by the defense in the penalty area or behind its own goal line. The ball must go over the crossbar between the goal post uprights. Only the goalkeeper may defend her goal, and she stands behind the goal line until the ball is kicked. No player may enter the penalty area or path of the ball until the ball is kicked. The defending team may be behind the goal line and on the field of play; the attackers must

be in the field of play. All players must be five yards away from the kicker.

GLOSSARY OF TERMS

Aerial ball: A ball that has been raised in the air from a kick of one or both feet, or has been thrown.

Attacking team or attackers: Members of the team in possession of the ball.

Blocking: To play the ball with any part of the body in attempting to control the ball. After blocking, the player should move in fast to keep control of the ball or to pass.

Dead ball: The ball is considered dead when out of bounds, following a score or a foul, during time-out, and on a tie-ball. It may not be played until the official so indicates.

Defending team or defenders: Members of the team trying to gain possession of the ball.

Dribble: To advance a ground ball or keep control of it by a succession of taps with the inside of the feet. Dribbling or bouncing by hand is not permitted although an aerial ball may be dropped to the ground and dribbled by foot.

Drop-kick: A kick in which the ball is dropped from one or both hands to the ground and kicked just as it bounces from the ground. The kicker should try for accuracy and distance.

Five-yard lines: Line five yards from each goal line and extending parallel to it across the field to the side lines.

Free kick: A place-kick awarded to a team upon an infringement of rules by the opponents. It is taken on the spot, with all opponents five yards away, and it must move the distance of its circumference. The kicker may not

play it until it is touched by another player.

Fouls: An infringement of rules for which a free kick or a penalty kick is given the opponents. A double foul is simultaneous infringement by both teams, for which a toss-up is awarded.

Blocking: To impede the progress of a player without the ball and involving personal contact.

Boxing-up: To have two opponents guarding the player who has the ball. No decision is made by the official if the player makes a successful pass.

Charging: A player with the ball pushes into another player with the ball or her body.

Handling the ball: To touch a ground ball with hands or arms.

Holding: To prevent the progress of a player by placing hand or arm against her.

Holding the ball: To retain the ball longer than three seconds; or to take more than five seconds on a free kick or out of bounds; or to take more than ten seconds on a penalty kick.

Obstructing: To prevent the progress of an opponent who is attempting to advance the ball.

Pushing: To force an opponent away by hand, arm, or body.

Traveling: To take more than two steps with the ball, following a run, or to take more than one step while holding the ball at any other time.

Tripping: To use the legs or body in attempting to throw an opponent.

Goal posts: Two posts twenty feet high with a crossbar eight feet from the ground. These are placed on each goal line six yards apart and equal distance from the side lines.

Ground ball: A ball that is stationary, roll-

ing, or bounding on the ground. It remains a ground ball until played into the air from a direct kick.

Halfway line: A line extending across the field to the middle of each sideline, dividing the field into halves.

Juggle: A toss or tap of an aerial ball into the air once, and a regaining of it before it hits the ground or is touched by another player.

Kick-off: A place kick from the center of the halfway line to start each quarter and to resume play after scoring. The teams alternate in starting the quarters; the team scored against takes the kick-off.

Kick-up: The conversion of a ground ball to an aerial one by giving upward impetus to the ball by one or both feet or letting the ball roll up the leg to be caught in the air.

Out of bounds: When the ball is sent wholly over the side line or when the player with the ball touches the side line or ground outside. Play is resumed by an opponent taking a throw-in. If the ball goes over the goal line and does not score, it shall be put into play by an opponent who may use a punt, drop-kick, place kick, or throw-in. If it goes out of bounds between the goal posts, it shall be put in play from behind the goal line five yards from either goal post.

Own half: Half of field in which one's own goal is placed.

Own goal: Goal a team defends.

Penalty areas: The space in front of each goal enclosed by the goal line, sidelines, and five-yard line.

Penalty-kick marks: A line two feet long opposite the center of each goal line and twelve yards from it.

Pivot: A play in which a player with the ball steps in any direction one or more times with one foot while keeping the

other foot at its original place.

Place kick: A kick in which a stationary ball is kicked along the ground or into the air.

Punt: A kick in which the ball is dropped from one or both hands and kicked with the instep before hitting the ground. Accuracy and distance are important.

Restraining lines: A line drawn five yards from and parallel to the halfway line, on each side of it.

Tackling back: To attempt to regain possession of the ball from the opponents.

Throw-in: Any kind of one-banded or two-handed throw into the field from outside the sidelines when the ball has gone out of bounds. All other players must be five yards away and the thrower may not play the ball until it has been touched by another player. The ball may be played as an aerial or ground ball.

Tie ball: When two opponents place one or both hands on the ball at the same time, or one opponent places one or both hands on ball already held by player. Play is resumed with a toss-up.

Toss-up: Follows a tie-ball or double foul and consists of the umpire tossing the ball vertically between two opponents. They stand with their backs to their own goal lines and may tap the ball (after it reaches its height) once or twice but may not replay the ball until it touches the ground or another player. All other players must be five yards away and no toss-up may be taken nearer than five yards to a boundary line.

Trapping: A method of stopping the ball dead by use of the sole of the foot, the lower part of both legs, or the inside of one leg and foot.

Volley: A play in which an aerial ball is met by some part of the body.

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Swimming

HISTORY

Swimming, because it is not a natural activity for man, was undoubtedly learned by observing animals. Nevertheless it is believed that the history of swimming is as old as the history of man. Carvings depicting swimming, estimated at about 9000 B.C., were found on cave walls in the Libyan desert. Pictorial descriptions of early wars show soldiers swimming in the Orontes River. It was compulsory in the army of Persia. In the Old Testament the Bible made several references to swimming. The Ancient Hebrew law required that a father teach his son to swim.

In the time of the ancient Greeks and Romans the ability to swim was nearly as significant as the ability to read. Boys took swimming lessons as part of their education and it is surmised from historical evidence that girls were also taught the skill.

In the middle ages swimming was listed as one of the seven arts possessed by gallant knights. Accounts by Greek, Roman, Anglo-Saxon and Scandinavian classics describe the great swimming prowess of their heroes. During the dark ages there was little emphasis on swimming as part of the educational curricula.

In the eighteenth century the sport was again prescribed for students. At this time world wide interest was stimulated. It is presumed that the early strokes were similar to the dog paddle and side stroke. Later the breast stroke was used as a basic stroke for recreational and endurance swimming. In England competition demanded an experimentation with

other skills. England's merchant fleet, sailing the seven seas, observed the natives swimming in all parts of the world. Their skills were brought back to England resulting in the development of many strokes. Speed was increased in the use of the side overarm, trudgen, and crawl in which there is an over-water recovery of the arms.

Aquatics have increased tremendously in the United States in the last few years. There have been 51,200 community pools constructed in one year. Private pools have tripled in number in the last few years. Aquatic sports now include not only swimming, diving, boating, sailing, and fishing, but also aqua-planing, scuba diving, and water skiing. 120,000,000 Americans participate annually in aquatics, including 5,000,000 children attending 14,000 summer camps. In this country, though there has been a decrease, drownings still number over 6000 every year. The participation in aquatics and the number of drownings would seem to be reason enough for learning how to swim.

VALUES DERIVED FROM SWIMMING

Enjoyment and Satisfaction. Swimming invariably ranks high in popularity. It can be enjoyed by both sexes and by family and social groups of all ages regardless of skill. The handicapped find enjoyment in swimming. Satisfaction can be attained during the process of overcoming fear and in mastering new skills involving body control in a medium different from the usual.

Safety. This sport develops the ability to take care of oneself in the water and to assist others when their safety is imperiled.

Physical Fitness and Health. Swimming can contribute to physiological development by increasing cardio-vascular efficiency, thus producing greater endurance

and circulatory stimulation. It can contribute to the ability to relax and to the symmetrical development of most of the muscles of the body, thus improving the figure. It can contribute to the development of courage, poise, and self control.

GENERAL RULES OF SAFETY

1. Never swim alone, no matter how much skill you have attained.
2. Wait at least one hour after eating before going in the water.
3. Know the limit of your endurance and stay within it.
4. When taking a long swim, always be accompanied by a boat.
5. Comply with the regulations of the place in which you are swimming.
6. Be familiar with the environment of the swimming area.

SWIMMING POOL POLICIES

1. Take a warm soap shower without a suit before entering the pool.
2. Wear klacks to and from the pool.
3. Always wear a bathing cap into the pool.
4. Never wear street shoes in the pool room.
5. Stay out of the water with a cold, skin eruption, or any other infection.

Fig. 76. Shower.



6. Make your own decision in regard to swimming during the menstrual period.

BEGINNING SWIMMING SKILLS

Getting Into and Out of the Pool from the Side. Sit on the edge of the pool, place both hands to one side, roll over to face the deck, putting the weight onto the arms and slowly lower yourself into the water. To get out, stand close to the side, place both hands on the rail or deck, jump up to a position with the weight on straight arms and climb out.

Adjusting to the Water. Learn to get the feel of the body in the water by jumping up and down, ducking under the water and opening the eyes underneath, by walking, running, and sitting in the water to appreciate its buoyancy. Rubbing the eyes and face should be avoided to prevent irritation.

Breathing. Breathing is done in the same manner for all strokes whether the face is in or out of the water. The breath is taken in through the mouth when the mouth is above the water. The exhalation is done

through the mouth and nose with the face in or out of the water according to the stroke. When exhaling with the face in the water it is necessary to use a little more force than in normal breathing in order to overcome the pressure of the water. To practice this, stand with the feet wide apart for a good base of support, lean close to the water, turn the face to the side for breathing in above water and place the face in the water to blow out. Practice this until it can be done in the rhythm of normal breathing. The technique should be mastered; it is basic to swimming skill.

Turtle Float. Standing with the feet apart, the body is bent forward and the hands placed on the thighs. As the face is lowered into the water, the knees are bent to the chest and the hands slowly slide to a position just below the knees. To stand up, the feet are lowered to the bottom as the hands slide up to the thighs and the face is lifted out of the water.

Face Float. Standing with the feet in a forward stride (walk) position, the arms are extended forward in the water, the body leans forward, a deep breath is taken, and with a final push from toes of the forward foot the body slides onto the chest with the face in the water. It should be a smooth, forward movement. At the start, it may be done with the help of a partner: facing the partner, place the hands in the partner's hands under the surface of the water and follow the directions for the face float. The partner steps back and pulls the floater easily through the water. The floater assumes a horizontal position of the body, hands and legs extended and relaxed. To hold the float, relaxation is important.

Standing from the face float is accomplished by simultaneously bending the knees to the chest, bringing the arms down to the knees, and raising the head. When the body comes to a vertical position, the feet are placed on the bottom.

Back Float. The back float is taken by

Fig. 77. Breathing.





Fig. 78. Turtle Float.

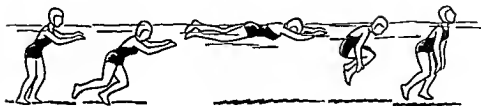


Fig. 79. Face Float.

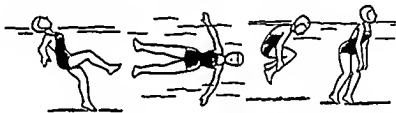


Fig. 80. Back Float and Stand.

placing the feet in a forward stride position and raising the arms to shoulder level in the water. A deep breath is taken as the body rests backward on the water. The forward foot raises. To complete the float, the rear foot gives a slight push off the bottom.

To hold the float, the lungs must remain filled with air and the chest held up. The arms rest in the water, either at shoulder level or above the head. The legs are kept well apart in the water and relaxed. The knees may be bent to the side. The position of the head and chest control the float. The head should rest easily in the water. The body should be held in the position described, but as relaxed as possible. The legs may come to the surface if you are buoyant, but many float in a balanced semi-vertical position with the legs low under the surface.

To stand from the back float, sit up by simultaneously bending the knees, bending at the waist, bringing the arms down and forward and the head forward. When the body comes to the vertical position, the feet are placed on the bottom.

Changing from the face float to the back float is a safety skill which can be used to place the tired swimmer in a resting position. One arm is brought down through the water to the side. The body is turned toward that arm and the back float position taken.

Simple Swimming on the Face and Back. Once you have learned to float, glide in the water by pushing off from the bottom or side. A simple kick can be added to this by kicking the legs up and down with the movement primarily from the hips, this can be done on both the face and back.

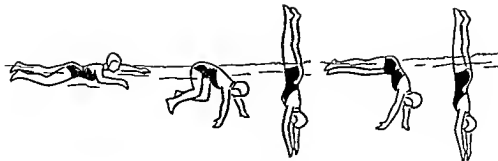


Fig. 81. Surface Dive.

Next an arm stroke can be added—on the face by pulling the arms down alternately toward the bottom, on the back by drawing both arms up along the sides of the suit and pushing the palms toward the feet (finning). When you can work the arms and legs together and propel yourself through the water, you are swimming.

The Surface Dive. The tuck position is taken from a face float with the head out of water. (It can also be executed from a breast stroke or a front crawl.) The head is tucked and the knees are brought up toward the chest as the body rolls forward. This position is like a front somersault. The arms aid by stroking to the side and then scooping towards the surface as the body descends. When the head is down and the hips are directly over it, the legs are forcibly extended. The descent should be made perpendicularly to the surface.

The surface dive can also be accomplished in the pike position. The execution is the same, except that the body is piked (jacked) at the waist and the knees are kept straight.

Fig. 82. Treading Water.



BASIC SAFETY SKILLS

Changing direction. When swimming in one direction, pull harder with one arm and turn in another direction.

Levelling off. To go from a vertical position after jumping into the water or from a tread position to a position on the back or face, incline the head forward or backward into the water and give several vigorous kicks to push the body onto the face or back.

Treading Water is used as a means of support, with the swimmer assuming a sitting position. The arms may or may not be used. One of four leg strokes may be used.

1. Single scissor—the side stroke kick is used in a vertical position.
2. Pedaling—like walking a treadmill or riding a bicycle.
3. Egg Beater or Figure 8—done by rotating the lower part of the leg outward and downward. The legs move alternately.
4. The Frog Kick—the elementary back stroke kick in a vertical position.

Assisting from the Side of the Pool. A beginner, though she has little skill herself, may assist another from the side of the pool:

1. By reaching with the arm or the leg while in the water. Holding firmly on to the side of the pool, an arm or leg

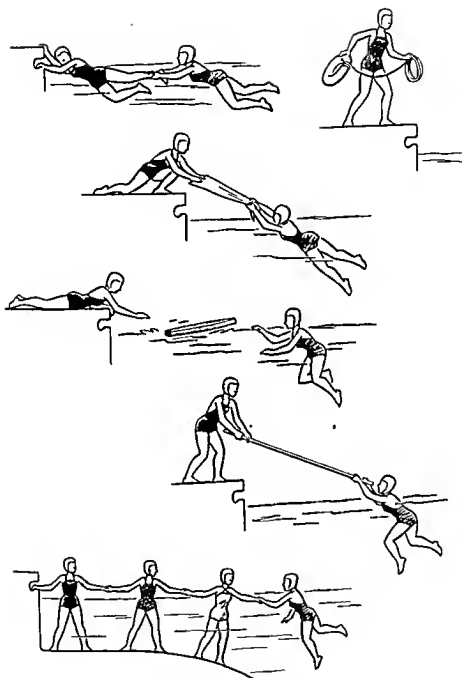


Fig. 83. Assisting from Side of Pool.

extended toward the floundering swimmer.

2. By increasing the reach with a towel. The rescuer holds onto the end of a towel or similar object. The other end

is thrown out as far as it will reach. The rescuer may be on land, or in the water holding on to the dock or the side of the pool.

3. By using a kick board. A kick board is



Fig. 84. Elementary Backstroke.

pushed to the floundering swimmer who may support himself with it until rescued.

4. By using a pole. From the deck a pole is extended to the floundering swimmer. The swimmer should be given a chance to get a firm hold and then the pole is slowly drawn back to the side.
5. By using a ring buoy. The coil is held over the left hand (if right handed) with the fingers forward. The buoy is thrown beyond and to the side of the swimmer, then drawn within her reach. After the swimmer has a firm hold on the buoy, it is drawn slowly to the side of the pool.
6. By using a chain of swimmers if the swimmer is just beyond the shallow water depth, the others present (even though non-swimmers) may form a human chain by holding hands. The first person, holding the rail or something on shore, extends a free arm to the second, the second to the third, and so on out to the last in standing depth. The end individual then reaches for the one in trouble. The rescuers close the chain by bending arms and pulling the flounderer to shallow water.

FIVE BASIC SWIMMING STROKES

There are many swimming strokes. No attempt is made here to describe all of them. The more advanced swimmer should

consult the books in the bibliography for further descriptions.

A swimming stroke well performed is a rhythmic stroke; the body is relaxed except when the muscles tighten up to produce the power. Every stroke consists of a power phase and a glide phase. The swimmer should take advantage of the momentum during the glide phase. It is a time when the swimmer may relax even though the glide position must be held. It may be called controlled relaxation.

THE ELEMENTARY OR RESTING BACK STROKE

The starting position. The swimmer is on her back, with arms at the side close to the thighs and legs straight and together. The swimmer may assume the back floating position and then bring the arms to the side and the feet together for this starting position.

Arms. The arms recover up along the sides of the body until the hands are at the shoulder level, the palms out and the elbows down. The arms are extended sideways diagonally above the shoulders. The arms are pulled down to the sides parallel to the body. The entire arm stroke is done beneath the surface.

Legs. The legs drift apart. The knees are bent, the feet turned out. The knees should not come out of the water. The legs are extended out to a diagonal position and then whipped in to the starting position.

Coordination of the stroke. The legs re-

main in the starting position while the arms are drawn up to the shoulders. The knees are bent while the arms are extended sideways. The legs are extended out to the side and both the arms and the legs stroke simultaneously to the starting position. The glide is taken in the starting position.

THE FRONT CRAWL STROKE

The crawl stroke is one of the most popular strokes. It can be used for both speed and distance swimming.

The starting position. The body is in the face float position with face in the water.

Arms. The arms stroke in a windmill fashion, one pulling while the other recovers. The arm is placed in front of the body with the wrist relaxed and the elbow slightly flexed. The finger tips enter the water first. The arm glides in a relaxed position. The arm presses down for 2 or 3 inches and then pulls directly backward to a position on line with the shoulder. The arm is in easy extension until the fingers point to the bottom. Then on the recovery the lift of the arm comes from the shoulder with the elbow flexed and high. The arm is relaxed and it is carried forward by a reach with the shoulder.

Legs. The kick is called the crawl kick or flutter kick. The entire leg swings from the hip with the ankle and knee relaxed. The emphasis is on the up kick. The ankles are extended with the toes turned inward. One leg kicks up while the other one relaxes down. *Note:* The leg action is taken under water with the legs moving parallel to each other. The depth of the kick may vary from 10 to 20 inches. The heel may break the surface.

Breathing. The inhalation is done through the mouth as soon as the head is rolled to the side and back, thus raising the mouth above the surface of the water. The exhalation is done through the mouth and nose immediately as the face is turned into

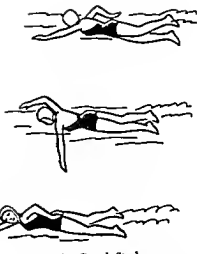


Fig. 85. Crawl Stroke.

the water. The head is rolled but not lifted.

Coordination of the stroke. Most swimmers use the 6 beat crawl which means that there are 6 kicks made with each complete arm stroke. (3 during the pull and 3 during the recovery of the arm, or 3 during the inhalation and 3 during the exhalation.) The inhalation is done when the top arm is beginning its recovery and the exhalation as the top arm completes its recovery. Thus, for swimmers breathing on the left side, the left arm is the top arm. *Note:* The glide is taken on each arm after it enters the water and before the pull is begun.

THE SIDE STROKE

In the starting position the swimmer is on either side. The under arm with the palm down is extended forward under the head. The head rests on the under shoulder. The top arm rests on the upper hip. The legs are straight and together.

Arms. One arm strokes while the other recovers, and vice-versa. The under arm strokes straight down until the fingers point to the bottom and is then brought in to the under shoulder. It recovers to the starting position with the hand just under the surface and the fingers pointing in the

line of direction. The top arm recovers across the body to the under shoulder. It strokes to the starting position with the palm toward the feet.

Legs. A scissor kick is taken. Keeping the legs together both knees are drawn up. The top leg moves forward by increasing the bend. The under leg moves backward. From this position the legs are whipped together finishing in the starting position.

In the coordinated stroke the under arm strokes while the top arm recovers as the knees are drawn up. The under arm recovers as the top arm strokes at the same time the legs are extended and whipped together. The arms and legs return to the starting position. Upon the completion of the leg and arm strokes the swimmer glides through the water in the starting position. The inhalation is taken during the stroke and the exhalation is taken during the glide.

The Side Overarm Stroke. This stroke is similar to the side stroke with the exception of the recovery of the upper arm. It recovers above the surface of the water and enters the water in front of the face.

THE BREAST STROKE

In the starting position the swimmer assumes a face floating position with the arms in easy extension in front of the head, and with the legs extended and not more than a few inches apart.

Arms. The stroke is performed with the arms under water. The arms stroke simultaneously in a laterally downward and backward movement to a position in line with the shoulders. The elbows are then flexed and drawn in towards the body. The arms are extended forward in front of the face with the palms down under the surface of the water.

Legs. The kick is taken in one continuous movement. The heels are about 2 inches apart. The knees are bent and the feet drawn toward the body. The feet are separated with the toes turned out, the legs are extended, and the thighs are squeezed together as the feet come together.

The breath in is taken at the beginning of the arm pull. The exhalation is taken during the remainder of the stroke with the head in the water.

In the coordination of the stroke the head is raised for the inhalation as the arms pull to the shoulders. The legs are held in extension. The knees bend at the beginning of the recovery. A glide in the starting position follows. The exhalation is taken as the arms recover and glide.

THE BACK CRAWL STROKE

In the starting position the body should be in a semi-horizontal position on the back with the head and shoulders slightly forward.

Fig. 86. Breast Stroke.

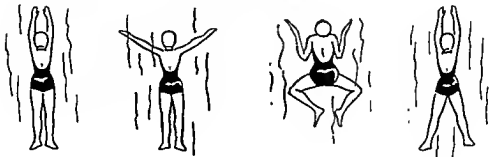




Fig. 87. Back Crawl.

Arms. One arm is extended behind the head. It enters the water diagonally above the shoulder. The hand enters the water with the fingers first. The arm pulls about 6 inches under the surface to the side of the body. The recovery is made by a straight arm lift and swing to the starting position.

Legs. The kick described on page 185 for the front crawl is used for this stroke. The entire leg swings from the hip with ankle and knee relaxed. The emphasis is on the upkick. The ankles are extended with the toes turned inward. One leg kicks up while the other relaxes down. *Note:* The leg action is taken under water with the legs moving parallel to each other. The depth of the kick may vary from 10 to 20 inches.

In the coordination of the stroke. Most swimmers use the 6-beat crawl which means that there are 6 kicks made with each complete arm stroke. (3 during the pull and 3 during the recovery of the arm).

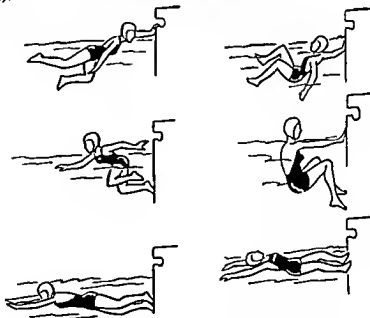
URNS

After a swimmer has developed a fair degree of skill in the basic styles of swimming she can develop endurance by swimming continuous widths or lengths of the pool. To swim continuously she must know some turns.

The Grab Turn is the simplest type of face turn. When swimming the front crawl, the swimmer grasps hold of the rail with the forward hand and assumes a tucked position of the body. She pivots toward the shoulder of the back arm. Approximately two feet below the water surface she places her feet against the wall of the pool and pushes off under the surface of the water with the body in an extended position.

The Closed Turn. When swimming the front crawl, the forward hand is placed on the wall beyond the center of the body, with the fingers approximately 8 to 10 inches below the water surface. Simultaneously the legs are brought into a tuck position, a pivot is executed by a strong push of the hand against the wall, and the swimmer places her feet against the wall and

Fig. 88. Turns. Left: Grab. Right: Back Crawl Turn



pushes off under the surface of the water into an extended position.

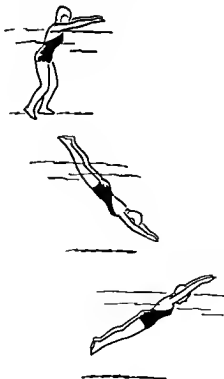
The Back Crawl Turn. This is a closed turn. As the leading hand touches the wall beyond the center about 8-10 inches under-water, the head is brought forward and the legs drawn up to the chest. While the body remains tucked the feet swing toward the hand on the wall and are placed on the wall from 8-10 inches below the surface; the body is vigorously extended with the hands over the head and underwater.

DIVING

SAFETY MEASURES

Only one diver should be on the board at a time.

Fig. 89. Porpoise Dive.



A diver should be sure the water is clear of swimmers before diving.

It is dangerous to take repeated jumps on the board before diving.

The depth of water under the board should be 8 to 10 feet for a low board (1 meter) and 12 to 15 feet under a high board (3 meter).

A diver should always be aware of the depth of the water and of any hazards which might make diving dangerous.

STEPS IN LEARNING TO DIVE

1. *Porpoise dive.* This is executed standing in chest-deep water. The swimmer throws herself forward with the arms in front of the body and the head down and at the same time gives a vigorous push from the bottom with the legs. This gives the swimmer a sensation of going under the water head first.

2. *Sitting dive.* This is executed by sitting on the edge of the pool with the feet on the rail. The depth of the water should never be less than the height of the diver. The arms are stretched over the head against the ears. The body bends forward with the head and arms toward the water and between the knees. As the body leans forward, the diver pushes with her feet and falls forward into the water.

3. *Kneeling dive.* This may be first taken from both knees and then from one knee with the foot of the other leg on the edge of the pool. The arms are held as in the sitting dive. The diver leans over as before and as the balance is lost a push is given from the forward foot.

4. *An Elementary Dock Dive.* The diver stands at the side of the pool, feet together and toes gripping the edge of the pool. The arms are raised overhead in front of the body. The body is bent and the head is held down between the arms until the balance is lost. A push is given with the feet as the



Fig. 90. Elementary Dock Dive.

balance is lost and the diver enters the water head first.

5. *A Spring Dive from the Dock.* The diver stands at the side of the pool, toes gripping the edge and arms at the sides. The arms are swung forward to start the dive. The arms are swung down as the weight is raised to the toes and the ankles and knees are bent. A forward and upward swing is taken as the ankles and knees extend, lifting the body into the air. The head is up when the maximum height is reached, then brought down. The water is entered perpendicularly and close to the side of the pool.

6. *A Dive from the Board.* The diver should repeat steps 3, 4, and 5 on the board. The springboard is an aid to getting height. The body weight bends the board and it springs back to help lift the body upward and forward.

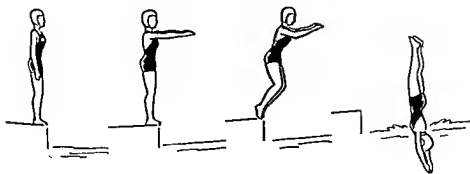
SPRINGBOARD DIVING

The Running Front Dive

The running front dive is one of the simplest of running dives using a springboard. It may be broken down into four parts: the approach, the take-off, the position in the air, and the entry into the water.

1. *The approach.* The approach for running dives consists of at least three average-size steps taken at a speed slightly faster than walking speed, and a hurdle. The arms are relaxed and swing easily at the sides of the body, either in opposition or parallel to each other. The eyes are focused on the end of the board. The hurdle is a jump made from one foot prior to coming down to the board for the take-off. Its purpose is to gain height. A high hurdle means a long drop to the board, hence power to push down the board. To take the hurdle, the hurdle leg pushes down forcibly against the board while the knee of the other leg is lifted ahead of the body to waist height, lifting the

Fig. 91. Spring Dive from Dock.



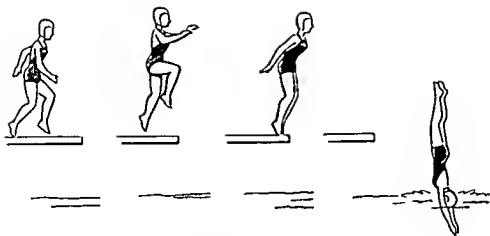


Fig. 92. Running Front Dive.

body into the air over the end of the board. The legs are together and straight at the peak of the hurdle, and both feet contact the board at the same time for the take-off. The arms are used to help lift the body during the hurdle.

2. *The take-off.* At the instant before the take-off, the body should be aligned and balanced over the feet; the knees should be slightly bent. The take-off is made from both feet. As the diver leaves the board, the knees, ankles,

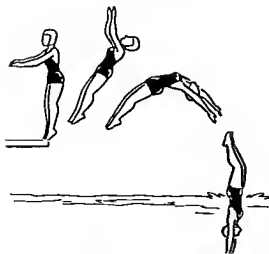
and trunk are extended. The arms again lift the body, aided by the board. The head is carried in line with the body throughout the approach and take-off.

3. *The position in the air.* From the top of the arc of the dive, one of three fundamental body positions may be performed:

- a. *Layout*—the body is straight.
- b. *Pike*—the body is bent at the hips in a jackknife position; the legs are straight.
- c. *Tuck*—the body takes a somersault position. The knees are bent to the chest with the arms around them.

4. *The entry:* The entry of the diver into the water should be perpendicular to the surface. The arms are extended ahead of and in line with the body. The entire body is extended and held as taut as possible. The entry for the running front dive is made head first.

Fig. 93. Back Dive.



The Back Dive

In the starting position the diver stands on the end of the board, back to the water, heels extending beyond the board. The body is aligned and balanced over the balls

of the feet. The arms are extended ahead of the body at the level of, and in line with, the shoulders.

1. *The Lift:* The body is held in the starting position as the arms are slowly lowered to the sides of the body and are then raised sideways to shoulder level. With a forceful movement, the arms are pulled down to the sides and are then extended directly overhead. Simultaneously with this movement, the knees and ankles press forcibly down on the board and then extend as the board pushes the body upward.
2. *The position in the air:* The back is arched and the head is dropped back as the height of the dive is reached. The arms are extended beyond and behind the head in a "Y" position. The legs are together and are extended.
3. *The entry:* The entry of the diver into

the water should be perpendicular. The arms are extended ahead of and in line with the body. The entire body is extended and held as taut as possible. The entry for the back dive is made head first.

Other Dives

There are many fancy springboard dives. They fall into 5 classifications: forward dives (facing the water on the board), back dives (back to water on the board), reverse dives or gainor dives (facing the water on the board, cutting back toward the board on the entrance), inward or cut-away dives (back to water on the board, cutting back toward the board on entrance), and twisting dives, which may be any of the above with a half (a half turn of the body) or full (a full turn of the body) twist.

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CHAPTER
TWENTY-ONE

Synchronized Swimming

HISTORY

The origin of the term synchronized swimming is accredited to Norman Ross, who used it in the 1934 Chicago's World Fair when he announced a water show which had been prepared by Katherine Curtis. Before this time, swimming of this type—done in recreation or for demonstration, aquatic carnivals, and shows—had been done to the accompaniment of music and had been called rhythmic swimming or water ballet. Synchronized swimming has come to mean activities performed in the water in a planned pattern which is in harmony with a specific accompaniment. It has become a popular phase of aquatics and is being taught in schools, colleges, and camps, and used as a recreational and competitive activity by many groups. The National Association of Synchronized Swimming for College Women and the International Academy of Aquatic Art are the two new organizations promoting this phase of swimming. The Amateur Athletic Union has sponsored competitive synchronized swimming for several years.

VALUES

Synchronized swimming is above all an enjoyable activity. As soon as a beginner has reached any level of proficiency in a few skills, it is fun to put them together in a pattern. There is an element of creativity in working

out patterns. The advanced swimmer is challenged to continue the acquisition of new skills and to invent new stunts and combinations of strokes and stunts. The performance of these can improve endurance, skill, and body control. Synchronized swimming offers an opportunity for several swimmers to work together as a group on the development of a composition.

EQUIPMENT

In addition to the swimming area some form of accompaniment is needed. Almost any type of accompaniment can be used. Phonograph records are the most satisfactory for complete routines; but there are many others, such as live instruments, orchestras, choirs and percussion instruments. For practice of stunts and strokes, any sort of time beater—such as castanettes, drums, or a whistle for phrasing—is helpful. It is possible to recite phrases of songs, have the group sing them, or use records with an especially definite beat for practice of combined skills.

BASIC SKILLS

STROKES

Stroking is the means of moving about from one spot to another in the pool. The direction of the stroking may be in circles, lines in any direction, columns, squares, and many designs. Stroking is basic to choreography.

Synchronized swimming employs adaptations of the standard swimming strokes such as the front crawl, back crawl, breast, elementary back, side and side overarm. Emphasis is placed on the arms and head which are visible above the water, rather than on the kick which should be done entirely out of sight under the surface

without splashing. The arm stroke and recovery may be modified, additional movements added, or the rhythm altered to interpret a particular mood. The parts of two or more strokes may be combined. These are called hybrid strokes. Some examples are: two side strokes, a back crawl and two side strokes on the other side; a breast stroke, a side stroke, a front crawl and a back crawl.

The skills must be in harmony not only with the accompaniment but also with other swimmers if there is more than one in the routine.

STUNTS

The other area of basic skills is stunts. Many have been worked out and named. An abundance of new ones are constantly being discovered. Any swimmer may work out an original one. Combinations of these are used in composition to interpret the accompaniment and mood of the routine. The three basic body positions used in the execution of these are:

1. *Tuck* in which the body is rolled up with the knees and hips bent. The toes are pointed.
2. *Pike* in which the hips are bent and the legs are at right angles to the trunk.
3. *Layout* in which the whole body is straight and the toes are pointed.

It is necessary for the swimmer to develop a kinesthetic feeling to appreciate body position and to learn breath control.

Sculling is fundamental to most stunts. It is described below. Descriptions of additional stunts may be found in the references listed in the bibliography.

Sculling. The layout position is assumed. The body may be propelled in various directions. For sculling head first, the palms are turned down and out and then circled facing and pushing the water toward the

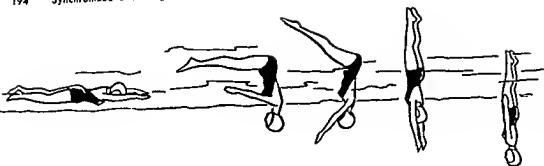


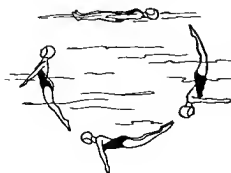
Fig. 94. Porpoise.

feet, describing a figure 8. For sculling feet first, the palms are turned out with the thumbs toward the bottom of the pool. The hands then pull in a semicircle from the feet toward the head. In both types the arms move continuously.

Porpoise. It is basically a front surface dive executed in either a tuck or pike position. The starting position is a layout position on the face. The head is dropped forward and downward as the arms scoop sideward and then downward. The trunk bends forward from the hips and the legs lift to a vertical position. In a flying porpoise the legs push off from the bottom, the body is driven out of water and then a porpoise is executed.

Dolphin. From a layout position on the back, the head is dropped back. With the palms out the arms press down, around,

Fig. 95. Dolphin.



and up—drawing the body, held in an arched layout position, around in a circle until the starting position is resumed.

Back Somersault Tuck. From a back layout position the knees are drawn to the chest in a tuck position. The body is dropped backward. The arms press down, back, up, and forward in a circle. When the body has gone once around in a complete somersault, the legs straighten to the starting position.

Front Somersault Tuck. From a front layout position the head is dropped down as the knees are bent to the chest. With the palms turned outward the arms press first upward and backward and then downward and forward. The body turns in a complete somersault and returns to the starting position.

Front Somersault Pike. This stunt is the same as the previous one, except that the knees are straight and the hips bent in a pike position.

Ballet Legs. While sculling in a back layout position, the knee is bent toward the chest, the leg extended into the air with the toes pointed, bent again to the chest and returned to the starting position.

Submarine. In the ballet leg position described above, the arms press outward and upward, submerging the body to a point between the knee and ankle, and then returning to the starting position.

Shark. With the body in an arched posi-



Fig. 96. Back Tuck Somersault.

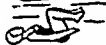


Fig. 97. Front Tuck Somersault.

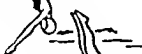


Fig. 98. Front Flip.





Fig. 99. Ballet Legs

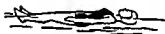


Fig. 100. Submarine.



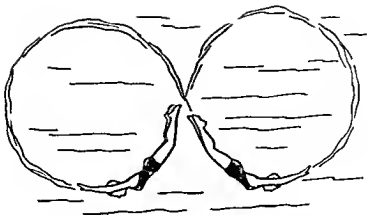
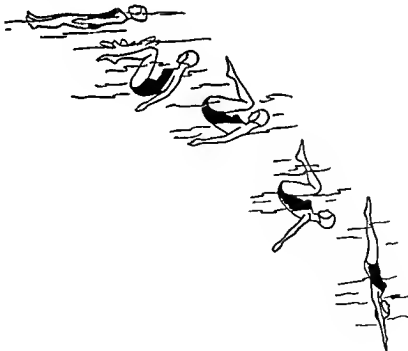


Fig. 101. Shark.

tion on the side, and the top arm extended over the head on the surface, the underarm pulls the body backward in a circle with a series of short strokes. The body remains in a side layout position throughout the movement. This may be done in a figure 8.

Kip. In a layout position on the back, the knees tuck to the chest as the body rolls backward. When the head is under the hips, the legs are extended and the trunk straightened and submerged in a vertical position.

Fig. 102. Kip.



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company manufactured this equipment, but was not allowed to sell it under the former name. This name seems to have been well liked and is in common use today.

TACTICS AND STROKES

GRIP OF RACKET

Penholder Grip. In this grip, the racket is held as one would hold a pencil, with the thumb and forefinger around the handle and the face of the racket pointing toward the table. The other fingers are placed behind the face of the racket to give more power to the strokes. The advantage of this grip is that there never has to be any change and the same stroke may be applied for all types of shots.

Lawn Tennis Grip. In this method, a player merely shakes hand with the racket for the forehand grip. A V should be formed by the thumb and the forefinger, and the other fingers are placed well around the handle. For the backhand, the hand should be shifted to the left until the

knuckles are on top and the thumb is straight against the back of the handle.

SPIN

Spin is the most important factor in table tennis strokes, because it throws the opponent off guard and allows for fast, accurate shots. A very flexible wrist is required to impart a spin to the ball. There are three types of spin that may be applied.

Top Spin. To put a top spin on the ball, the racket should be drawn across the top surface of the ball as it is hit. This makes the ball spin in the direction it is going.

Side Spin. To put this type of spin on the ball, the racket should be drawn across the ball on a diagonal plane so that the ball spins diagonally sideways as it travels.

Back Spin. This is commonly known as the chop or slice. As the ball is hit, the racket should be drawn on the underneath side or surface, causing the ball to spin backwards as it travels across the net.

SERVE

In the serve, the ball must be thrown

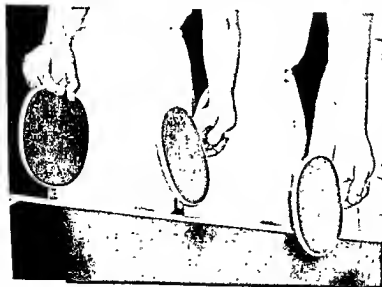


Fig. 103. The Grips.
Left to Right: Penholder;
Backhand; Forehand.



Fig. 104. Backhand Lob.

into the air and hit so that it hits on the server's side of the table first. The tennis grip is the most effective, and the stroke resembles that of the forehand drive. The service should be low and swift and land in the rear of the opponent's court. A spin may not be imparted to the ball.

STROKES

Forehand Stroke. This is used to return the balls that come to the racket or the right-hand side of the player. The swing is very short, and, as the ball is contacted, the wrist should snap to give the stroke the necessary spin.

Backhand Stroke. This is the most widely used stroke when the tennis grip is used. It is, however, a defensive stroke, and should be varied with others. Some players use it almost exclusively. The swing is short, and should be accompanied by a quick flick of the wrist.

Smash. This should be a winning shot.

The ball must bounce high and close to the oet so that the player can hit it with the face of the racket when the ball is high. The ball should bounce over the net and rebound with such force and height that the opponent is unable to return it.

HINTS TO REMEMBER

1. Play away from the table.
2. Vary the speed of your game.
3. Use offensive shots as well as defensive ones.
4. Always keep your eye on the ball.
5. Develop good wrist action and practice the types of spin.
6. Make your serve effective.

RULES

GAME

A game shall consist of 21 points.

Each point shall have the value of 1. The winner of a game is the person to reach 21 points first and to have a two-point margin over her opponent.

SERVE

The ball shall be put in play with a serve. The ball must hit the server's side of the table before going across the net, and it must hit the table on the receiver's side. Only one trial is allowed.

CHOICE OF SERVE

The choice of serve shall be decided by means of chance or by a rally in which the ball must go across the net at least three times. The winner of the rally has her choice of serving first or court.

LENGTH OF SERVICE

One player serves for 5 points, and the receiver becomes the server. In case of doubles the partners serve alternately. The initial server serves first, the initial receiver second, the server's partner third, and the receiver's partner fourth. In singles, the ball may go across the net and land in any section of the court; in doubles, the serve must be made first to the righthand side and then to the receivers' right court. When the score is 20-all, the service is alternated.

ORDER OF RECEIVING

In doubles, partners must receive alternately, and once the receiving order has been established it cannot be changed during the game. The partner of the previous server becomes the receiver. The one who is receiving becomes the server.

POINT

A point may be won by either side when the opponents fail to return the ball across the net, let the ball bounce twice, touch the net with any part of body, or support self by touching the table to return the ball.

LET

A "let" means that the ball is declared out of play, with no server or team to be awarded that point. A let serve is any ball that touches the top of the net and then goes into the proper court. In case of a rally, the ball is considered good and continues in play.

GAME ETIQUETTE

1. Greet your opponent in a gracious manner. Shake hands and thank or congratulate her after playing.
2. Play your best at all times. Try to develop a variety of techniques and master as many as possible.
3. Practice before matches are scheduled rather than take match time.
4. Determine who is to serve by some agreed method of chance.
5. Keep the server supplied with balls.
6. Do not try to catch your opponent off guard on service. Serve only when she is ready. Remember that trick spins are illegal!
7. As server, call the score immediately after each point.
8. Return stray balls as soon as your point is played. Request the return of a ball that has rolled to another table by calling "Thank You."
9. Wait until the point is completed be-

fore walking by a table where a match is in progress.

10. Accept winning or losing pleasantly. Excuses are not needed.
11. Cooperate with and thank your officials. Do not question or show disapproval at decisions. If no official is present repeat questionable points. Do not argue with your opponent!
12. If necessary to default a match, do so without begging for a postponement.
13. Applaud good plays when the point is over. No comment or expression is necessary on errors.

TYPES OF TOURNAMENTS

SINGLE ELIMINATION TOURNAMENT

Players or teams are paired in brackets for the first round of matches. In each successive round, the winners are paired until only one winner remains. This is a quick tournament, because one-half of the players are eliminated each round. The more experienced players may be "seeded" or distributed in the upper, lower, second, and third brackets, so as not to be eliminated in an early round. When the number in the tournament is not a power of two,

the number is subtracted from the next highest power of two to determine the "byes." Half the byes are placed at the top of the brackets, the remainder at the lower brackets. They skip the first round of play. The number of teams or players minus one equals the number of matches to be played in the tournament.

LADDER TOURNAMENT

Players or teams are listed one below the other. Each challenges any one of the three players directly above him and, if he wins the match, exchanges places with the loser; she may, with additional challenges and wins, work her way to the top. Enough time must be allowed to enable players low on the ladder to reach the top.

ROUND ROBIN TOURNAMENT

One player or team plays every other team or player. The formula for determining the number of matches in one round is

$$\frac{\text{Number in Tournament} \times (N - 1)}{2}$$

The winner is the team or player with the largest percentage of games won. (Divide the number of games won by the number of games played.)

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Tennis

HISTORY

Tennis is one of the oldest sports that has come down to us through the ages. From the fourteenth through the seventeenth centuries it was popular among the nobility in France and England and was commonly known as "the nobilities' game." Laws were passed in several countries forbidding the peasants or the priests to play.

In the early stages of its development, tennis was a comparatively simple game, involving little exercise, and in no way resembled the fast, hard, exciting game of today. All the shots were underhand, and it was considered a breach of etiquette to cut the ball or send an overhand shot to a lady "opponent."

The earliest rackets were long handled, rounded boards, and the first balls were made of string. The ball was hit across a cord hung in the middle of the court and was not allowed to bounce. Gradually "court tennis" as it was known gave way to lawn tennis, which is the game we play today. The rackets changed in shape from triangular to oval, and were strung with silk or gut, whereas the ball was made of felt with rubber seams and body.

Lawn tennis, played on a grass lawn, became very popular in England, and in 1875 it became a part of the program of the All-England Croquet Club. This club participated at Wimbledon, and the club championships were held there. The national championships are still held at Wimbledon, which is known as the home of lawn tennis.

The United States Lawn Tennis Association was formed in 1881, and

the first standard rules were adopted. Newport, Rhode Island, was named the site of the first American Championship. In 1900, the then doubles champions, Dwight F. Davis and Holcomb Ward, donated the Davis Cup award, and competition is open to men's teams throughout the world. The Wightman Cup for women is a similar award, and competition is open to all women's teams. Forest Hills, Long Island, is the scene of the American tournaments and in the spring and summer of each year both men and women gather for the tournaments which include men's and women's singles, doubles, and mixed doubles.

THE GAME

The game of tennis is played on a hard or grassy surfaced court which is divided into halves by a net drawn across the center. Opponents face each other across this net, and by a series of serves and rallies each side attempts to hit the ball in such a way that its opponents are not able to return their shots. The singles game has one player on each side of the court; the doubles game has a team of two.

Early in its history tennis was considered a "sissy" game, but now is recognized as one which requires skill, agility, and dexterity. It is an ideal co-recreational sport, and one which provides recreational opportunities in later life. Since arriving in America in the nineteenth century, it has taken a firm foothold and is popular with people of all ages.

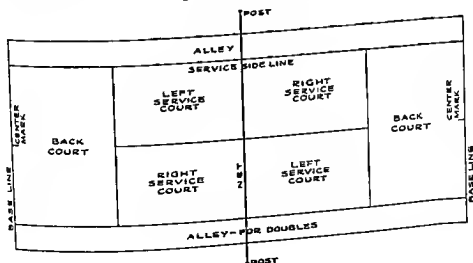
EQUIPMENT

Court. The tennis court with its specific dimensions, areas, and boundaries is diagrammed in Figure 105. Care should be taken to keep the surface of the court in good condition. Most courts are clay, asphalt, or cement.

Net. Outdoor nets are of tarred hemp with a canvas top over a rope or steel cable. The ropes should be loosened at night, and nets taken in during the rain. Steel nets are becoming more popular, they wear longer and require less care.

Racket. The tennis racket has a wood frame (preferably of ash) and is strung with gut, nylon, or silk cord. When not in use, the racket should be kept in a press to

Fig. 105. Tennis Court.



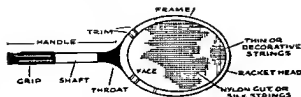


Fig. 106. Tennis Racket.

avoid warping. Choosing a racket of proper size and weight is important. Your instructor, an experienced player, or a reputable sporting goods salesman can help you select the correct racket for you.

Balls. Tennis balls are felt covered, and should have a good bounce. Purchase a well-known brand, and use them only as long as they are in good condition. Keep them in the can when you are not using them.

Clothes. A tennis dress or shorts costume is white, without ornamentation, and loose enough to allow freedom of movement. Regulation tennis shoes should be worn over heavy white socks. A visor or sun glasses are essential in bright sunshine.

STROKES IN TENNIS

In order to play a good game of tennis it is essential to have mastered three strokes—the forehand and backhand drives, and the serve.

FOREHAND DRIVE

Grasp. The racket is held in front of the body, and the player grips it as though he is shaking hands with the racket. A V should be formed by the thumb and forefinger up the narrow part of the handle. The head of the racket should be held above the wrist, and the wrist should be firm.

Back Swing. The racket should be swung straight back, with only a slight bend in the elbow. Considering that waist height is the most comfortable position to hit the ball in, the racket is held at this level. At the end of the backswing the head of the racket should be raised slightly. As the racket is swung backward, the player steps back on her right foot with her left side to the net, and the weight is borne on the right foot.

Forward Swing. Still keeping the racket in the same relative position, one swings the racket forward, and the elbow is straightened at the time of contact with the ball. The swing should be wide and clear of the body and at about waist height, considering the height of the ball. If a low ball is to be hit the swing is brought lower by bending the knees. The face of the racket should be flat as it contacts the ball. The weight is transferred to the left foot as the ball is stroked.

Fig. 107. The Grips.
Left to Right: Forehand;
Backhand; Serve.



Follow Through. This is merely a continuation of the foreswing or the finish of the stroke. After the ball has been contacted, the racket continues its swing toward the left side of the body, and the wrist may be relaxed somewhat.

BACKHAND DRIVE

If the right side is turned far enough toward the net, there should be no difficulty learning this stroke.

Grasp. To change from the forehand grip to the backhand, merely turn the hand about a quarter of an inch to the left. This places the knuckles on top of the handle, and the thumb is flat along the back of the handle. The thumb held in this position offers more support, and is a stronger grasp for girls.

Back Swing. The back swing is done from the left side of the body so the right shoulder should be facing the net and the weight on the left foot. The swing is made about waist height and the elbow is well up and out from the body. It is essential to swing the racket as far back as possible, and at the end of the back swing to raise the racket head slightly.

Forward Swing. As the racket is swung forward, the elbow is extended forcibly, and a wide arc is made with the arm. The ball should be contacted a little in front of the waist, but the swing should be about waist height and the wrist should be firm at the time of contact. The weight is shifted to the right foot as the foreswing is made. The face of the racket is flat as the ball is stroked.

Follow Through. The racket continues its swing toward the net, and the wrist may be relaxed somewhat.

THE SERVE

Grasp. Shake hands with the racket.

Downswing. The weight should be back on the right foot, and the racket is dropped down and swung backward and upward until it is above the shoulder. At this point the wrist is relaxed, and the head of the racket is allowed to drop behind the shoulder. On the downswing the elbow should be rotated outward to allow for a free and easy swing.

Forward Swing. The ball should be thrown well above the head and a little to the right of the body. As it is descending, the racket comes forward to hit the ball. At this point the elbow is extended and the wrist becomes firm so that the ball is contacted with the center of the strings. As the ball is contacted the weight shifts to the left foot so that the entire body force can be used in the swing.

Follow Through. After the ball has been hit the racket should continue on its downward path and should cross the body and end on the left side. At the same time the right foot is brought forward.

Tossing the Ball. Many serves are ruined because the ball is not in the proper position for hitting. It is wise to practice tossing the ball high and out to the right before ever attempting to hit it.

ADDITIONAL STROKES

Volley. This is usually a net shot, hitting the ball before it bounces. This may be done with either a forehand or backhand grip. The foreswing is cut short, and the ball should be directed at an angle away from the opponent.

Slice. This is a defensive stroke, and is used only when a player is caught off guard and wants to get back into position. The stroke resembles an up-and-down swing, or chopping wood. Beginners are not advised to use this.

Lob. The lob is also a defensive stroke, and is used when a player desires to get back into position or to send the ball over

the head of a net player; the ball is lifted high into the air, and then lands in the rear of the opposite court.

Smash. The smash is an offensive stroke and is executed in the same manner as a serve and is usually done from a midcourt position. It is very difficult to perform but successful if the player is in good position and the ball is in front of the player when it is hit.

Straight-Line Drive. This is a placement shot, and may be done with either the forehand or backhand drive. The object is to send the ball straight across the net to fall on the right or left side line.

Cross-Court Drive. In these shots the object is to send the ball diagonally across the net away from the opponent.

RULES OF THE GAME

SCORING

1. The server keeps score, if there is no official, and calls the score before each point is played. The server's score is always called first. Points are:

- a. First point—15.
- b. Second point—30.
- c. Third point—40.
- d. Fourth point—game.
- e. Love—no score.
- f. Deuce—both sides have three points or 40-40. When the score is deuce, one side must win two consecutive points to win the game: (1) advantage and (2) game.
- g. Advantage server—Server makes the first point after deuce.
- h. Advantage receiver—Receiver makes the first point after deuce.

2. A set consists of six games won by one player before her opponent scores four. The set must be won by two games. If a 6-5 situation occurs, games continue until one player wins by two games.

3. A match for women consists of winning two out of three sets.

PLAY

1. Choice of service or court is decided by toss of coin.

2. Server must stand behind base line on proper half of court. (First service is from right court.)

3. Service must travel diagonally across the net to the opposite forecourt inside the proper service area.

4. Balls landing on area boundary lines are good.

5. The alley is used in doubles play, but is not used for the service.

6. A service must bounce before the receiver attempts to return it.

7. The server is permitted two tries to serve the ball into the proper area. If the first try is good no second try is necessary.

8. The service can be a fault if:

- a) the server strikes at the ball and misses it.
- b) the ball strikes any object other than the net before landing in the service court.
- c) the ball fails to clear the net or lands outside the proper service area.

9. Two consecutive faults on one side causes loss of point for server.

10. A let service is taken over and is not considered a fault.

11. One player serves an entire game alternating service areas after each point is scored.

12. Faults in play which cause loss of point are:

- a) Failing to properly return the ball before it bounces twice.
- b) Returning the ball outside the playing area.
- c) Letting the ball hit you or your clothing during the rally.
- d) Throwing the racket to hit the ball.

- e) Hitting the net with the racket or clothing.

TACTICS AND TEAM PLAY

UP AND BACK

In this method of play the server is responsible for the back section of the court and her partner the net. If the net player is a skillful player it can be very effective but the entire court cannot be covered, and careful placement of shots will win many points for the opponents. When playing net, the best position is from five to eight feet from the net, and the various volleys are the most effective shots.

ADVANCING TOGETHER

This type of doubles play is considered the most effective. Both players play the back court together and advance to about ten feet from the net. Since a net shot is harder to return than a backcourt shot the players should try to work toward the net and at the same time push their opponents backward. In this way the entire court can be covered and no corners are left open.

NET PLAY

A player should always try to advance toward the net, because a point is more easily won from this position. The best net position is from five to eight or ten feet from the net.

BACKCOURT PLAY

The best position for this type of play is at the rear of the court and in the center of one's half. In case of hard drives it is recommended that the player stand behind the base line to return these shots.

WAITING POSITION

This position should be assumed when waiting to receive the serve or a return shot. The player stands facing the net with the racket extended in front of her, held loosely with the right hand and supported by the throat with the left hand; knees are bent, and the weight is forward on the balls of the feet. From this position the player can return either a forehand or backhand drive by turning the side to the right or left.

GAME ETIQUETTE

There are certain courtesies that should be observed when playing. Some of the most common are:

1. The server, before serving, should ask her opponent, "Ready?" and the receiver should reply, "Ready" or "Serve."
2. No player or spectator should walk on or around a tennis court if there are players on the court.
3. If a ball has rolled onto another court, the term "Thank you" is used when asking others to return the ball. Wait until their rally is finished.
4. If in doubt when the ball is served, it is wise to retake the serve.
5. Applaud a placement—never a fault.
6. A player usually shakes hands with her opponent after a match and thanks her.

BATTLEBOARD

Battleboard is "indoor tennis," and is played against a backboard. The lower half of this backboard is inclined forward slightly, and a net is stretched across the backboard two feet in front of the inclined part. The inclination prevents the ball from being trapped behind the net. It was invented by Mary K. Browne, former national singles and doubles champion.

One half of a regulation tennis court is marked on the floor. The ball is hit against the backstop and must rebound within the boundary lines. Both singles and doubles games may be played, and regular tennis rules apply except in the case of doubles. With them, the ball must be hit by alternate partners each time, so that the server is first, receiver second, server's partner third, and receiver's partner fourth.

The main value of battleboard is that it allows one in practice strokes and become more proficient in skills. The ball bounces very fast, therefore requiring accurate and fast timing and good footwork.

GLOSSARY OF TERMS

Ace: Term used for a serve which the receiver is unable to touch.

Set: A set is completed when one side has won six games and has a two-game lead over the opponents.

Match: For women, a match consists of the best two out of three sets; the same holds for mixed matches. For men, it is the best three out of five sets.

Server: This is the term applied to the player who first puts the ball into play. She must serve diagonally across the net, and the ball must land in the service court on the opposite side. The first serve of a game is always served from the right-hand court and thereafter from alternate courts.

Receiver: The player receiving the serve. She should stand behind the service court line, and in case of a hard serve it is wise to stand near the base line to receive.

Choice of sides or serving: This shall be decided by a coin toss or by spinning a racket. In the latter case, the decorative strings on the racket are called "rough" or "smooth," depending upon

the knotted or smooth side. The winner has her choice of service or side of court.

Change sides: Opponents shall change sides after every odd game—one, three, five, and so on.

Order of service: At the end of the first game the receiver becomes the server, and this order is continued through the set. In case of doubles play, partners serve alternately. The first server's partner is the third server, and so on. Partners must receive throughout each set on the same sides of the court which they originally select when the set begins. Once the order of service has been established it cannot be changed during the set.

Order of receiving: In doubles, partners receive alternately, one in the right court, the other in the left court. There is no set order for receiving, but once the order has been established it may not be changed during the set.

Alternate courts: Each point must be served in alternate courts, the first point being served from the right court.

Fault: A fault occurs when a player fails to return the ball legally, or does not return it at all. It is considered a fault if the player touches the net with her racket or any part of her body.

Foot fault rule: This rule applies in the service, and in it the server must stand behind the base line, must keep one foot in contact with the ground, and may not run or walk into the serve.

Double fault: This occurs when the server fails in serve either of two balls into the proper service court, and is commonly known as "doubles."

Line ball: A ball that falls on a boundary line is considered in bounds. In case of the service for singles or doubles, the ball must fall on the service court lines or in the court bounded by them.

Let service: A let service is one which touches the top of the net and goes over into the proper court. The server is allowed to re-serve the ball. In case

of a rally, the ball continues in play, and no let is called.

Net ball: A net ball is one which is caught in the net, and is therefore a fault.

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CHAPTER TWENTY-FOUR

Volleyball

HISTORY

The game of volleyball was created by William G. Morgan, instructor of the Young Men's Christian Association in Holyoke, Massachusetts, in 1895. It was an outgrowth of the need of the men for recreation and, also, for some type of activity to take care of a large number of people.

The first games were played with the bladder of a basketball, and a tennis net was strung between two posts. This type of ball proved too light and the net too narrow, so Mr. Morgan designed a ball and had a sports company make it for him. The same kind of ball is in use today.

The first set of rules was adopted, in 1900, by the Physical Directors Society of the YMCA, and they, too, have remained the same with only a few modifications. There exists today a United States Volleyball Association, which has set standards for tournaments and edits the men's rule book.

Brooklyn, New York, was the first city to hold a national volleyball tournament for men. This was in 1922, and since that year various cities throughout the country have held tournaments with teams participating from colleges, community centers, factories, YMCA's, and other groups.

The game was gradually shifted from the YMCA's to parks, playgrounds, industries, schools, and colleges, where it found great popularity. It is played by the young and the old, boys and girls—in fact, by all age groups. The rules for girls are the same as the boys' rules. It is thus an excellent co-recreational activity. The rules and standards for the girls are

controlled by the Volleyball Committee, which is a part of the Division for Girls' and Women's Sports.

THE GAME

Volleyball is played both indoors and outdoors. It is played on a rectangular court with two teams of six people, playing a ball over a net stretched high across the middle of the court. The object of the game is to attempt to make it impossible for the opponent to return the ball while preventing it from hitting the court on one's own side of the net. It may be modified for young or poorly skilled players.

EQUIPMENT

Ball. The official volleyball is made of rubber or a rubber bladder covered with a leather case.

Net. The net is 32 feet long and 3 feet wide. It is stretched across the middle of the court and should measure 7 feet, 6 inches from the top of the center to the court. It may be lower in a game using modified rules.

Court. The court is rectangular, 60 feet long by 30 feet wide and should have a height of 20 feet or more.

TECHNIQUES

SERVE

Underhand Serve. This is the easiest

type of serve and the one most commonly used. The server stands facing the net, with the left foot forward and the ball held in the palm of the left hand with the fingers pointing to the right. Swing the right arm back and bend the left knee; at the same time, the left hand should be swung across the body. The right arm should then swing forward and hit the ball out of the left hand. The fist, palm, or heel of the hand may be used. To follow through, the right arm should continue forward and upward while transferring the weight to the left foot.

Overhand Serve. This type of serve gives the player greater control of the ball but requires more skill. To execute this serve, the player stands facing the net with the knees bent, the left foot slightly ahead. The ball is held in front of the right hip in both hands, with the right arm bent at the elbow and the left arm straight. The ball is thrown above the head or a little to the right. As it descends, the right arm is raised upward and backward, and the ball is contacted when it is even with the player's head. The ball should be hit with the flat of the hand so that the palm and the fingers may be used to give more force to the play. As the ball is hit, the right leg straightens, and the body is twisted to the left. Emphasis should be placed on the knee action in order to get the entire body behind the serve.

Sidearm Serve. The position of the body and the techniques are similar to the underhand serve, except that the ball is hit with a swing that is horizontal with the floor. The ball can be hit very hard with this

Fig. 108. (Left to Right) Open Hand Serve, Closed Hand Serve, Using Back of Hand, Closed Hand Serve, Using Thumb and First Finger.





Fig. 109. Recovery from Net.

serve, but players may find it difficult to control.

HANDLING THE BALL

Low Ball. A low ball is one that comes below the player's waist and requires alertness and agility to handle. The knees should be well bent and the feet apart to enable the player to get under the ball. The elbows are bent, the hands are rotated so that the thumbs are pointed outward, palms are turned up, and the fingers slightly bent. As the ball is contacted, the knees straighten, and the arms are raised upward and forward. The fingers give the impetus to the ball and guide its direction.

High Ball. This is the most commonly used shot, because the majority of volleys are high. In the high ball the ball may come

over the head, shoulder height, or just in front of the player, requiring the ability to step back, forward, or crouch quickly in order to be handled efficiently. The knees are bent and the left foot slightly advanced. The arms should be flexed at the elbows and the thumbs of both hands face each other. It is essential to use the fingers in this shot and to extend the wrists as the ball is hit. The control comes from the fingers and wrists, and the power from the extension of the arms and body, and the follow through with the shifting of the weight from the back to the forward foot.

Recovering Ball from Net. Any ball other than a serve may be recovered from the net, providing the player does not touch the net or step over the center line while doing so. In order to play the ball as it rebounds from the net, the player must move quickly toward the net and get her hands well under the ball. Then, rather than attempting herself to hit the ball across the net, she should try to send the ball upward and backward where a teammate can pass it across to the opponents' side.

SMASH OR SPIKE

This is generally done by the forward. The ball may be set up for her by a member of her own team, or it may be a high ball coming from the other side. In this shot, the player bends her knees and springs from the floor in an effort to get above the ball. As the player is descending, she hits the ball with the palm of her hand and turns toward the left slightly. As the spring is executed, the right arm should be bent, and as the ball is hit, it is straightened with force. This type of shot is most difficult for the opponents to return.

SETUP

This term refers to one player putting

the ball into position for another so that the latter may hit the ball across the net with such force or accuracy that a point may be won. The backs are in the best position to set up the ball for the forwards. The two most common setups are:

High Setup. In this the player makes a long, high pass to the front line player so that the ball will come down within six to twenty-four inches of the net.

Setup by Back. The ball is sent forward on a low arch toward the net but high enough to go over, in case the forward misses it. Both one and two types may be "smashed" by the forward.

BLOCK

It is a defensive stroke used against the

Fig. 110. Successful Block.



spike. It is executed close to the net. The blocker anticipates the smash and jumps with the spiker. The arms are thrust forward and the ball then rebounds from the hands and fingers.

STRATEGY

When receiving the service it is important that the court be adequately covered. It may be advantageous for the forward line to drop back a step or two. During the rally, the front line should play close to the net in order to receive passes from the back line, spike and block spikes of the opposing team. The back line should move up to about the center of the court. In this position it is possible to pick up spikes and if a high ball comes over the net it is fairly easy to back up to receive it. A team that must hit the ball upward over the net must be on the defense. To be on the offense a team must be able to control the ball so that a forward can hit it downward into the opponents' court. To cover the court adequately it is often necessary to move sideward. This should be done by taking side steps while facing the net at all times.

RULES AND GLOSSARY OF TERMS

Dead Ball. The ball is dead after point, side out, or any other decision which suspends play.

Delay. Persistent delay of the game may be called by the referee. Successive bouncing of the ball before serving may be considered delaying the game.

Double Foul. A double foul shall be called when players on opposing sides commit fouls simultaneously. In case of a double foul, the play shall be repeated.

Holding. The ball may not be caught or held by any player.

Illegal Play. An illegal play is one of the following: (a) catching or holding the ball; (b) playing the ball more than once in succession; (c) volleying the ball a fourth time; (d) allowing the ball to touch any part of the body except hands and forearms; (e) throwing the ball; (f) kicking the ball.

Lifting. A foul similar to holding which involves carrying the ball upward in the hands rather than contacting it sharply and cleanly.

Line Fouls. (a) Center line—player may not step over the center line when the ball is in play; (b) service line—the server loses her turn if she steps on or over the service line before the ball has left her hands.

Net Foul. It is a foul if any player touches the net when the ball is in play.

Number of Players. Six players make up an official volleyball team. In mass volleyball, however, any number may play.

Number of Volleys. On a play, three players may volley the ball before it is returned.

Out of Bounds. A ball is considered out of bounds when it strikes any surface or object—such as the wall or overhead equipment—or the ground outside the court. A ball falling on a boundary line is good.

Over Net. A player may not reach over the net to play the ball. She may, however, follow through if necessary.

Playing Time and Scoring. A game is completed when a team scores a total of 15 points or when 8 minutes of play have elapsed, whichever occurs first. The winning team must have at least a 2 point advantage. If a team is not 2 points ahead when 15 points has been scored or after 8 minutes of playing time, play continues until one team is 2 points ahead.

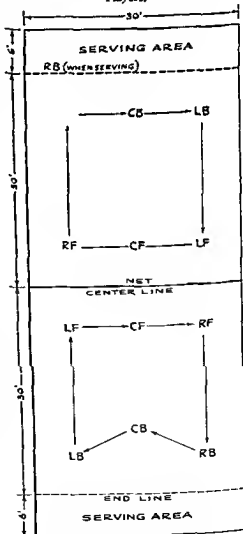
Playing the Ball. The ball may be hit by one or both hands, or the forearm, but with no other part of the body. The ball is dead if this occurs.

Point. A point can be scored only by the serving team when the opponents fail to return the ball legally to the serving team's court.

Position of Players. The players take their positions as illustrated in the accompanying diagram.

When the ball is served, all players must be standing inside the court except for the girl who is serving; as soon as the ball is served, however, a player may leave the court to play the ball.

Fig. 111. Volleyball Court and Rotation of Players.



Rotation. Rotation must be done clockwise, if there are six players. If there are more than six, as in mass volleyball, the rotation may be done by the first line moving right, the second to the left, and the third to the right. The server goes to the front line on the left side.

Serve. The service may be underhand, overhand, or sidearm, depending upon the ability of the player. The server must stand behind the back line and serve the ball across the net into the opposite court. There is only one trial allowed on each service. Each server serves until the referee calls "Side out."

Side Out. This term applies when the serving side loses its serve and the ball goes to the opponents for service.

Substitution. The team captain may ask for time out for substitution whenever the ball is dead. The player who is entering the game then reports to the scorer and to the referee before she takes her place on the floor. A player may not enter the game a third time.

Time Out. Each team is allowed two time outs in a game. The ball must be dead and in possession of the team requesting time. One minute is allowed for time out to rest and 15 seconds for substitution. The captain requests time out.

Fig. 112. Scoring.

TEAM <u>Freshmen</u>				TEAM <u>Sophomores</u>			
Serving order	Names of players	No. of pos.	Points	Serving order	Names of players	No. of pos.	Points
1	<u>Jean Schmidt</u>	RB	X 100	1	<u>Mary Lou Jones</u>	5	X 110
					<u>Bea Peterson</u>	9	1 01
2	<u>Phyllis Boyle</u>	RF	1 00	2	<u>Mary Whitney</u>	6	1 001
	<u>Helen Upson</u>		1 110				
3	<u>Mary Quinn</u>	CF	1 10	3	<u>Marsha Hunter</u>	2	X 1110
	<u>Jean Fisher</u>		1 001		<u>Mary Trotter</u>	1	1 11
4	<u>Lusan Williams</u>	LF	X 101	4	<u>Betty Bovine</u>	4	X 001
	<u>Ann Patrick</u>		1 00		<u>Peggy Knight</u>	3	11
5	<u>Lee Jamison</u>	LB	X 100	5	<u>Jo Carver</u>	8	1 100
6	<u>Barb Thomas</u>	CB	1 11	6	<u>Thelma Blome</u>	7	X 10
					<u>Mary Lou Saunders</u>	10	1 110
				Time Out (1) (2)			
First serve <u>Freshmen</u>				Game won by <u>Sophomores</u>			
Court <u>Women's Gym</u>				Score <u>16-10</u>			
Running score	X	X	X	X	X	X	X
	11	12	13	14	15	16	17
	18	19	20	1	2	3	4
				5	6	7	8
				9	10	11	12
				13	14	15	16
				17	18	19	20
Referee	<u>Jane Kilroy</u>			Umpire	<u>Lois McGeer</u>		
				Timer	<u>Dorothy Pope</u>		

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ARCHERY QUIZ

Match the best answer from the right column by placing the letter in the left column:

_____ Petticoat	A Colored rings on arrow
_____ End	B Mechanical indicator for sighting
_____ Cock Feather	C Long portion of bow
_____ Pile	D Holder for arrows
_____ Nock	E Groove at end of arrow or bow
_____ Footed	F Field for shooting
_____ Fistmele	G Insertion of hardwood in arrow to insure strength
_____ Crest	H Measure of distance between bow and string
_____ Range	I Several ends shot at one time
_____ Timber Hitch	J Part of target extending beyond scoring
	K Shooting 6 arrows at one time
	L Knot used to tie string to bow
	M Pointed tip of arrow
	N Feather at right angle to nock
	O Serving
	P Laminated

Circle T or F:

- T F 1. On the release, the right hand should creep.
- T F 2. The left elbow points at 6 o'clock at full draw.
- T F 3. In a good stance the weight is on the right foot.
- T F 4. The bow may break if the string is snapped without an arrow in it.
- T F 5. A Columbia Round consist of 24 arrows at 50, 40, 30 yards.
- T F 6. A bounce or rebound scores 5 points.
- T F 7. The cock feather may be identified either by its color or by its position in relation to the nock.
- T F 8. In unbending the bow, the loop of the string is slipped off the bow.
- T F 9. In pulling the arrow from the target, the arrow should be grasped near the target and twisted as it is drawn out.
- T F 10. When using the sight on the bow, one may also have a point of aim marker.

Fill in the word or words that correctly completes each of the following statements:

1. The _____ of a bow is its pull to a full draw measured in pounds.
2. An arrow is identified by its _____.
3. The _____ is the metal point of the arrow.
4. One should aim _____ the gold at 30 yards and _____ it at 50 yards.

5. The clustering of arrows in close proximity is called a _____.
6. The _____ is a definite spot to which the drawing hand must come consistently in drawing.
7. An important factor in selecting an arrow is its _____.
8. The _____ is the flight the arrow describes through the air.
9. Archery equipment is called _____.
10. Putting an arrow in the bow is called _____ the arrow.
11. The method of aiming may be _____ or _____.
12. If an arrow cuts between the red and blue rings, the score is _____.
13. An arrow passing completely through the target scores _____.
14. Shooting at a distant target flat on the ground is called _____ shooting.
15. Field archery consists of shooting at _____ targets.

BADMINTON QUIZ

Circle T or F:

- T F 1. It is to your advantage to serve first in a doubles game.
- T F 2. In the forehand grip, place the thumb on top of the racket.
- T F 3. By switching your grip for the backhand strokes, a longer reach is possible.
- T F 4. Wrist action is of little importance in the service strokes.
- T F 5. The best of three games in a regulation match is called a set.
- T F 6. The cross-court net shot should land on or near the rear boundary line to be effective.
- T F 7. The "out of the hand" serve should be reserved for advanced players.
- T F 8. The hairpin net shot can be performed only from a position close to the net.
- T F 9. The serve is performed from behind the rear boundary line.
- T F 10. The "round the head shot" is a forehand shot from the player's back-hand side.
- T F 11. A side's turn at serving is called an ace.
- T F 12. The loss of service is referred to as a down.
- T F 13. A service which touches the net and then falls into the proper service court is a net serve.
- T F 14. A shuttlecock falling on the line is out.
- T F 15. An effective stroke to return the short service would be the smash.

Fill in the correct answer:

- 16. Badminton derives its name from _____ but its origin is traceable to _____.
- 17. Badminton is unlike tennis in that many of its strokes require snappy _____ action.
- 18. The _____ court is long and narrow; the _____ court is short and wide.
- 19. Play always starts from the _____ when the bird is awarded to the opponents.
- 20. The purpose of the badminton press is to prevent _____.
- 21. The "in" side is the side _____.
- 22. The side winning the rally shall have first choice of _____.
- 23. A point is scored only when the "_____ " side makes a _____.
- 24. The umpire should call "_____ " if the shuttle touches the net in service and lands in the proper court.
- 25. If the player misses the shuttle altogether in attempting to serve, she _____.
- 26. The _____ is the basic stroke.

27. It is _____ if in play the bird touches the net and just topples over it.
28. The player's score should be an _____ number when player is in or receiving from her original court.
29. The game score for women's singles is _____.

Define:

Game Bird:

Trim:

ABA:

Mixed Doubles:

Match:

Fault:

Ace:

Match the letter of the description with the shot it best describes:

- | | |
|-------------------|---|
| _____ Smash | A A fast flight parallel, or nearly so, to the floor. |
| _____ Drive | B A flight in which the bird is directed along and close to the net-tape, falling in or near the alley. |
| _____ High Clear | C A rapidly descending flight, very fast and at sharp angle to the floor. |
| _____ Drop | D A rapidly descending flight, directed close to the net—may be underhand or overhand. |
| _____ Cross-Court | E A flight in which the bird is directed upward and just over the net-tape. |
| _____ Hair-Pin | F A rapidly ascending flight, the bird being directed high overhead and falling in back court. |
| | G A flight in which the player strikes the bird while her back is to the net. |

BASKETBALL QUIZ

Name the situation described in each statement as legal, violation, foul, or repeat of play:

- _____ 1. Guards on opposing teams tie the ball over the center line. One of the guards has her foot on the division line.
- _____ 2. A guard deflects the ball to her forward and then steps over the division line.
- _____ 3. A guard, while standing two feet from the sideline, intercepts the ball from the opponent's throw-in.
- _____ 4. Two forwards of the same team take turns receiving the center throw.
- _____ 5. Two players jump for the ball on a jump ball but neither taps it.
- _____ 6. During a time-out, a substitute enters the game without being beckoned in by either official.
- _____ 7. In a small gymnasium, the player with the ball leans against the wall before passing.
- _____ 8. On a jump ball one player lands in opposite half of circle.
- _____ 9. While bouncing the ball, a forward runs into a guard.
- _____ 10. A Red forward snatches the ball from the hands of a Blue guard.

Apply as many terms from the left column as you think are involved in each skill of the right column:

- A Transferring weight
- B Cocking joint
- C Rotating the trunk
- D Bending the knees
- E Flattening the arc
- F Resisting with feet
- G Applying spin
- H Moving arms and legs in opposition
- I Keeping ball close to body
- J Backing up ball with body
- K Swinging straight in preparatory action

- Pivot _____
- Layup Shot _____
- Single Underarm Pass _____
- Jump Ball _____
- Taking the Rebound _____
- Bounce Pass _____
- Free Throw _____
- Dribble _____
- Low Catch _____

Circle T or F:

- T F 1. Banked shots should be used from the center court region by skilled players and as they move nearer to the "ideal spot" rimmed shots should be used.

- T F 2. The bounce pass is more difficult to guard than the chest or shoulder pass.
- T F 3. Although two types of defense, zone and player-to-player, each have many followers, a combination of the two is also practiced.
- T F 4. Defensive action is largely a matter of capitalizing on space left free by the opponents or of maneuvering to open a space.
- T F 5. Rules of basketball and game strategy in relation to these rules should be learned at the same time.
- T F 6. Zone guarding may apply to set or shifting zones; it may apply to forwards as well as guards.
- T F 7. Best defenses against the bounce are to scoop the ball, deflect the ball, or tie the ball.
- T F 8. Good footwork involves change of pace or change of direction or both.
- T F 9. "Cut" is a good command for the forward getting into scoring area.
- T F 10. When a forward is closely guarded and is facing the guard, she should attempt a forward pivot to try to get away from the guard.

Select the one best answer:

- ____1. Most baskets are scored on
 a) short rim shots
 b) short banked shots
 c) medium rim shots
 d) medium banked shots
- ____2. What is the name of the foul which is called on a player who steps in front of an opponent and by personal contact interferes with the player who has started to advance the ball by a bounce?
 a) blocking
 b) charging
 c) obstruction
 d) pushing
- ____3. It is illegal to bounce the ball more than three times in a limited dribble. The penalty is
 a) a foul
 b) a violation
 c) a jump ball with opposing player
 d) an out-of-bounds ball at the endline
- ____4. It is a violation if a player
 a) takes a limited dribble, jumps, and pivots
 b) takes a limited dribble and then bounces ball to teammate
 c) pivots by moving one foot several times
 d) juggles the ball and then lets it bounce on the floor
- ____5. If a forward passes the ball to her teammate and then stands in front of her, she is doing a
 a) moving screen
 b) blocking
 c) player-to-player defense
 d) stationary screen

BODY MECHANICS QUIZ

Match the example in the right column that best describes the term in the left column:

- | | |
|-----------------------------|---|
| _____ 1. Inertia | A Angle of incidence |
| _____ 2. Balance | B Rotation of the trunk in overhand volleyball serve |
| _____ 3. Velocity | C Imparting force to ball above, below, or at side of its center of gravity |
| _____ 4. Torque | D Relaxation |
| _____ 5. Cocking Joint | E Wrist action in badminton strokes |
| _____ 6. Transfer of Weight | F Stepping into soccer punt |
| _____ 7. Reaction | G Integrating preliminary movement, action, and followthrough successively |
| _____ 8. Summation | H $\frac{\text{Distance}}{\text{Time}} =$ |
| _____ 9. Opposition | I Stepping into the hockey drive with the left foot |
| _____ 10. Spin | J $\frac{\text{Acceleration}}{\text{Distance}} =$ |
| | K Location of gravital line with respect to the base |
| | L Once in motion, the body tends to keep in motion |
| | M Bracing the neck and spine in head volley |
| | N Explosive action |
| | O Stepping into the left hand lunge with the left foot |

Circle T or F:

- T F 11. One should learn techniques in slow motion and then gradually progress to the rate of speed one will be using to play the game.
- T F 12. The gallup, slide, shuffle, skip, hop step, and pivot are basic locomotor patterns common to a number of sports.
- T F 13. One should progress to perfection of skills rather than improvement of skills.
- T F 15. Common elements in most game activities may be divided into similarities in skill pattern, similarities in basic locomotor patterns, and similarities in spacial relationships.
- T F 16. Optimum health means merely freedom from physical disease or disability.

- T F 17. An athlete's heart may beat slower than the average person's heart but each beat will carry more blood.
- T F 18. Increased rest and relaxation may be an element in bringing the weight up to normal.
- T F 19. A strong foot must have a high longitudinal arch.
- T F 20. Shoes with arch supports are essential in maintaining a strong longitudinal arch.

Select the word or phrase which best completes the statement, and place the letter in the space.

- ____21. Relaxation can often be encouraged by a) budgeting of time, b) drinking coffee, c) taking "no-doze" pills, d) "keeping going."
- ____22. Economical movement is movement which a) uses the maximum muscular power in relation to the work produced, b) uses a minimum of muscular power in relation to the work produced, c) uses the greatest number of muscles in relation to the work produced, d) may not usually be the most attractive movement.
- ____23. The smooth appearance of "gliding" while walking up or down stairs may be achieved by a) keeping the knees slightly flexed on each step, b) carrying the weight on the ball of the feet, c) leaning forward at the waist, d) springing on each step.
- ____24. The foot is composed of a) a few large bones, b) many small bones held together by ligaments, c) cartilages held together by ligaments, d) bones the same size and shape as those in the hand.
- ____25. When a foot is pronated the weight is on a) the inside of the foot, b) the ball of the foot, c) the outside of the foot, d) the metatarsal arch.
- ____26. Movement tends to be graceful and efficient when a) muscles work explosively, b) muscles work successively or in sequence, c) the muscles are fatigued after being used, d) the muscles have the least tone possible to produce the movement.
- ____27. Hypertension a) is normal and beneficial, b) is usually the result of too much physical activity, c) is usually the result of boredom, d) if it becomes habitual is a serious symptom.
- ____28. Dysmenorrhea a) is seldom caused by increased tension, b) is seldom caused by poor posture, c) is usually the result of a structural abnormality, d) is often the result of poor hygiene.
- ____29. *Scissors* is an excellent exercise for a) reducing, b) strengthening the muscles of the lower back, abdomen, hips, and thighs, c) flexibility, d) strengthening the abdominal muscles.
- ____30. One of the most important values of exercise taken in college both in physical education and extracurricular activities is to a) control the weight, b) lessen the chance of infection, b) improve muscle tone, d) improve the appetite.

BOWLING QUIZ

Place the letter of the best answer before the number:

- _____ 1. A bowling game consists of a) strips, b) frames, c) boxes, d) lanes.
- _____ 2. The number one pin is also known as the a) main pin, b) spare pin, c) bead pin, d) New York pin.
- _____ 3. If all pins are knocked down on the first ball, the bowler scores a) 10 points, b) 10 points plus the score of the next ball, c) 10 points plus the score of the next two balls, d) a bonus of 10 points.
- _____ 4. If a bowler in delivering her first ball steps over the foul line she a) scores only one ball, b) loses score of first ball, c) loses score of both balls, d) does not get the second ball.
- _____ 5. The most used approach consists of a) 3 steps, b) 1 hop and 3 or 4 steps, c) 4 steps, d) 5 steps.
- _____ 6. A Split is indicated when the following pins are left standing after the first ball: a) 4 and 10, b) 4 and 7, c) 6 and 10, d) 5 and 9.
- _____ 7. If a bowler scores a strike, 7-2, a spare, and 0-8, the score would be a) 54, b) 44, c) 46, d) 56.
- _____ 8. The symbol marked on the score sheet for a split is a) \times , b) \diagup , c) —, d) 0.
- _____ 9. It is recommended that new bowlers use a) curve ball, b) backup ball, c) straight ball, d) hook ball.
- _____ 10. One should aim at the a) spot on the foul line one foot from the right gutter, b) 1-3 pocket, c) straight at number 1 pin, d) the spot.
- _____ 11. After the second ball a bowler indicates an error or miss on the score sheet if she a) leaves pins standing unless there is a split, b) steps over the foul line, c) bowls first ball in the gutter, d) fails to make a split.
- _____ 12. A bowler should use a) the heaviest ball provided for women, b) several balls suited to herself, c) one ball suited to herself, d) the lightest ball for women.
- _____ 13. One should strive for a) a fast ball, b) a lofted ball, c) a slow ball, d) a medium speed ball.
- _____ 14. The back swing should be a) begun on the first step of the 4 step approach, b) different each time you bowl, c) completed with the third step of the 4 step approach, d) faster than the forward swing.
- _____ 15. During the delivery a) the trunk should bend forward, b) the right foot should slide, c) the left knee should bend to lower the body, d) your eyes should be on the ball.

Score the following game:

Each number represents a ball: 10, 6, F, 7, 2(split), 0, 10, 10, 10, 1, F, 9, 1, 9, 0, 10, 2, 8.

1	2	3	4	5	6	7	8	9	10	TOTAL
---	---	---	---	---	---	---	---	---	----	-------

Match the best description of the term at the left by placing the number in space before the term:

- | | |
|------------------------|---|
| _____ Double | 16. Depression behind the pins. |
| _____ Turkey | 17. Mechanical apparatus for replacing pins. |
| _____ Sleeper | 18. 250. |
| _____ Brooklyn Side | 19. 300. |
| _____ Picking a Cherry | 20. Game. |
| _____ Channel | 21. Alley. |
| _____ Lane | 22. Depression to right and left of the alley. |
| _____ Perfect Score | 23. Distance between pins 7-10. |
| _____ Pin Setter | 24. Distance between the finger holes in the ball |
| _____ Pit | 25. Space between pins 1-3. |
| _____ Pocket | 26. A pin standing directly behind another and not visible to the bowler. |
| _____ Span | 27. Three successive strikes. |
| | 28. Knocking down only the front pin of pins standing. |
| | 29. Strike out. |
| | 30. Spare bowling. |
| | 31. Space between pins 1-2. |
| | 32. Two successive strikes. |

CAMPING AND OUTING QUIZ

1. List, and give the uses for the three main types of firewood:

a) _____:

b) _____:

c) _____:

2. Explain how to find North using each of the following methods:

a) By the stars:

b) By the sun:

c) With a watch:

d) With a compass:

3. Mark the following statements T or F.

- a) _____ Cut towards you to make a point on a stick.
- b) _____ A sheath knife is worn on the belt when not in use.
- c) _____ One should not try to sharpen her own pocket knife.
- d) _____ Blazing is injurious to trees.
- e) _____ Orienteering refers to getting acquainted with your surroundings.
- f) _____ In packing a knapsack, the lighter items are packed first.
- g) _____ Cooking over coals is most successful.
- h) _____ Continuous lashing is used to form a framework.
- i) _____ Matches can be waterproofed with paraffin.
- j) _____ Good wood for kindling would be apple, elm, or maple.

4. Match the following words with a phrase on the right. Each letter may be used more than once.

- | | |
|-------------------|---|
| a. Hunter trapper | _____ Gives quick, hot fire with heat concentrated in one spot. |
| b. Reflector fire | _____ Cooking fish on a board by reflected heat. |
| c. Indian Star | _____ Cooking meat over direct heat. |
| d. Council fire | _____ Makes a good bed of lasting coals. |
| e. Indian teepee | |

- | | |
|------------------|--|
| f. Broiling | _____Especially good for baking. |
| g. Barbecuing | _____Cooking slowly on a spit. |
| h. Toasting | _____Done in a pan over hot coals. |
| i. Planking | _____Used for campfire activities. |
| j. Frying | _____Used with an aluminum foil or tin can oven. |
| k. One pot meal | _____Lazy man's fire. |
| l. Tin can stove | |

5. Give a use for each of the following:

a) Square knot:

b) Clove hitch:

c) Square lashing:

d) Bowline:

e) Overhand knot:

f) Half-hitch:

g) Sheet bend:

h) Round lashing:

DANCE QUIZ

1. Circle T or F.

- T F 1. Isadora Duncan is referred to as the "Mother of Modern Dance."
 T F 2. Cecil J. Sharp is a well known modern dance critic.
 T F 3. George Balanchine is famous for his books on English Country Dance.
 T F 4. Hanya Holm has done the choreography for famous Broadway Musicals.
 T F 5. Louis Horst teaches both music and Modern Dance composition.
 T F 6. Arthur Murray advocates "If you can walk, you can dance."
 T F 7. Lloyd Shaw was the Dance Critic for *The New York Times*.
 T F 8. Mary Wigman is considered the originator of Modern Dance in Europe.
 T F 9. Ruth St. Denis was famous for her dances based on themes for American History.
 T F 10. Doris Humphrey made some of her most outstanding contributions to the field of dance after she was afflicted with severe arthritis.

2. Match each of the dances on the left with a country from the column on the right. Each letter may be used more than once.

_____ Rusty-Tuft	a. Cuba
_____ Pop Goes the Weasel	b. England
_____ Dive for the Oyster	c. Lithuania
_____ Rumba	d. United States
_____ Minuet	e. Israel
_____ Hora	f. France
_____ Fox Trot	g. Ireland
_____ Bleking	h. Sweden
_____ Kalvelis	i. Italy
_____ Jig	j. Scotland

3. Name a dance which is performed in each of the following formations:

- a. Square:
 b. Circle:
 c. Longways Set:

d. Straight Line:

e. Social Dance Position—

Closed:

Open:

4. Describe the following steps or figures:

a. Two-step:

b. Chassez right:

c. Grand right and left:

d. Set or Square:

e. Siding:

f. Grapevine step:

g. Allemande left:

h. Set and turn single:

i. Leap:

j. Buzz:

5. List the five basic locomotor skills:

a) _____ b) _____ c) _____

d) _____ e) _____

DANCE QUIZ (Continued)

6. What is meant by each of the following terms?

a. Percussive movement:

b. Accent:

c. $\frac{3}{4}$ time:

d. Focus:

e. Syncopation:

f. Technique:

g. Rondo:

h. Axial movement:

i. Choreography:

j. Composition:

FENCING QUIZ

Choose the phrase which best describes the situation and place its letter in the space to the left.

- _____ 1. Parry 4: a) thumb up; b) tip on a line with opponent's eyes; c) foil in diagonal line; d) pommel tight.
- _____ 2. Advance: a) two steps; b) heel of front foot down first; c) knees bent at all times; d) hips out.
- _____ 3. On Guard: a) knees bent over toes; b) foil arm bent at right angle; c) body inclined forward; d) foil tip pointed to center of opponent's target.
- _____ 4. Strategy: a) try to knock opponent's blade wildly to side; b) force is more important than timing; c) arm straight for good touch; d) try to find opponent's weakness.
- _____ 5. Lunge: a) left arm bent at right angle; b) extend arm as lunge is made; c) left leg extended; d) body bent forward, twisted slightly to left.
- _____ 6. Official Bouting Rule: a) On double touch, a tie is awarded; b) a slap is considered a foul; c) after a touch, fencers return to center of strip; d) judge is in charge of the bout.
- _____ 7. Target for women: a) neck and torso to top of the hip bone, front and back; b) torso from neck to top of the hip bone, front and back; c) mask, neck, and torso to top of hip bone; d) the foil side and the non-foil side.
- _____ 8. Offensive Tactic: a) crossing the foils; b) parry 4; c) recover from the lunge; d) simple thrust.
- _____ 9. Foil Part: a) bib; b) pommel; c) cutting edge; d) sharp point.
- _____ 10. Defensive Tactic: a) cut-over; b) infighting; c) parry; d) riposte.

Select the best description from right column and place letter before left column.

- | | |
|--|---|
| <ul style="list-style-type: none"> _____ 1. Appel or call _____ 2. Absence of blade _____ 3. Right of way _____ 4. Rapier | <ul style="list-style-type: none"> _____ 5. Parry 7 _____ 6. Pronated hand position _____ 7. Parry 2 _____ 8. Salute |
| <ul style="list-style-type: none"> A Form of greeting or acknowledgment B Position of attention C The strip D Used offensively only E Low outside protection F Derived from light side weapon, 18th century G Back of hand up, thumb to left side H Lunge with arm extension | <ul style="list-style-type: none"> I Front and back of body, torso to hip bone J Low inside protection K Fingers up, thumb to right side L Stamping the right foot twice M A triangular blade N Cross foils, step back and fence O Invitation to attack P Privilege given first to extend |

FENCING QUIZ

Choose the phrase which best describes the situation and place its letter in the space to the left.

- _____ 1. Parry 4: a) thumb up; b) tip on a line with opponent's eyes; c) foil in diagonal line; d) pommel tight.
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- _____ 10. Defensive Tactic: a) cut-over; b) infighting; c) parry; d) riposte.

Select the best description from right column and place letter before left column.

- | | |
|--|---|
| _____ 1. Appel or call | _____ 5. Parry 7 |
| _____ 2. Absence of blade | _____ 6. Pronated hand position |
| _____ 3. Right of way | _____ 7. Parry 2 |
| _____ 4. Rapier | _____ 8. Salute |
| A Form of greeting or acknowledgment | I Front and back of body, torso to hip bone |
| B Position of attention | J Low inside protection |
| C The strip | K Fingers up, thumb to right side |
| D Used offensively only | L Stamping the right foot twice |
| E Low outside protection | M A triangular blade |
| F Derived from light side weapon, 18th century | N Cross foils, step back and fence |
| G Back of hand up, thumb to left side | O Invitation to attack |
| H Lunge with arm extension | P Privilege given first to extend |

FIELD HOCKEY QUIZ

Complete the following statements:

1. "Advancing" the ball is called when _____
2. In driving to the right, the ball is played to _____
and _____
3. In the front tackle, the player meets _____
4. For a free hit from the circle, the ball may be placed _____
5. In receiving the ball from a teammate, one should face _____
6. "Sticks" consists of _____
7. To "draw" an opponent means _____
8. A bully is used _____
9. When a ball goes out of bounds at the side line it is _____
10. To drive in hockey is to _____
11. "Holding the whistle" means to _____
12. The flick differs from the push-pass in that it _____
13. In a dodge-to-the-right, the player directs the ball to the _____
side and runs to the _____ side.
14. The diagonal pass consists of passing _____
15. To "clear" means to _____

Select the best answer and place the letter in the space to the left:

- _____ 16. The bully is complete
 - a) upon striking the opponent's stick for the third time.
 - b) when the ball is played over the line.
 - c) when one player draws back her left foot.
 - d) upon striking the ball after the three stick taps.
- _____ 17. To scoop the ball is
 - a) lifted in the air.
 - b) pushed by the stick to the right or left.
 - c) carried on the stick and snapped sharply with a turnover of the wrist.
 - d) prodded out of the way of an opponent.
- _____ 18. "Sticks" consists of
 - a) the touches made on the opponent's stick in the bully.

- b) hitting another player's stick.
- c) raising the stick above the shoulder on the forward or backward swing.
- d) raising the stick above the waist on the forward or backward swing.

____19. A term used in connection with field hockey is the

- a) *restraining line*.
- b) foul line.
- c) *crease*.
- d) 25 yard line.

____20. In performing the drive, one should try to

- a) apply spin to the ball.
- b) loft the ball slightly to avoid an opponent's blade.
- c) transfer the weight and step into the drive.
- d) make short passes to the right and left.

GOLF QUIZ

Circle T or F:

- T F 1. When a golfer swings and misses the ball, one stroke is counted.
- T F 2. The person with the highest score for the previous hole has the honor of teeing off first.
- T F 3. An eagle is scored when the golfer has shot one under a perfect score for a hole.
- T F 4. The player who is closest to the hole on the green putts first, thus preventing the others in his foursome from hitting his ball.
- T F 5. When a golfer sees that a ball is going in the direction of a player, she should call, "Watch out!"
- T F 6. When playing on the green, the golfer should lay her bag of clubs at the edge of the green.
- T F 7. A match play is tournament play in which the final score is determined by total strokes.
- T F 8. A divot is a sharp bend in the fairway.
- T F 9. One should tee off in front of the tee marker.
- T F 10. If the ball is hit out of bounds, it is played from that spot where it rests and one stroke is added to the score.
- T F 11. If the ball is in a water hazard, one may play it as it lies or drop it over the shoulder and take a one stroke penalty.
- T F 12. Players should record their scores before leaving the green.
- T F 13. If the ball hits an opponent or her clubs, she receives a one stroke penalty and the ball is played as it lies.
- T F 14. Golf originated in Ireland.
- T F 15. The golf club is gripped mainly by the fingers.
- T F 16. The "Royal Road" to golf is through self-experimentation and practice.
- T F 17. When checking one's grip on a wood or iron shot, the golfer should make sure that the V's are pointing toward the left shoulder.
- T F 18. A full swing is used in putting.
- T F 19. When hitting a wood shot, the ball is played in line with the inside of the left heel.
- T F 20. When a player takes her stance with a wood club, she uses the square stance.

Fill in the following blank or blanks with the suitable word or words:

- 21. If a beginning player were to purchase a set of 5 clubs, she would purchase _____.
- 22. The two types of clubs are _____ and _____.
- 23. Golf courses are laid out in series of _____ or _____ holes.
- 24. All play starts at the _____, progresses up the _____ to the _____.

25. _____ is perfect score for a hole.
26. A drive which curves sharply to the left is called a _____.
27. The two types of golf competition are _____ and _____.
28. The position of the ball on the ground is called the _____ of the ball.
29. An _____ stance is one in which the L foot is drawn back so that the player tends to face in the direction of ball flight.
30. A _____ is any obstacle such as a sand trap, bunker, or tree.
31. The penalty for a ball that goes out of bounds is _____.
32. The name of the grip used for wood and iron shots is either the _____ or _____ grip.
33. The game of golf as played in its modern form was made famous by the _____ people.
34. The first woman to play golf was _____.
35. The higher the number of the iron used, the more _____ the stance becomes.
36. Both players having the same score on a hole call it _____.
37. Give the name or number of the club that can be used if the ball were in the following positions: a) Tee _____, b) Long shot on fairway, _____, c) Sand Trap _____, d) Green _____.
38. Golf was introduced into the United States in the _____.
39. The customary putting grip is _____.
40. A ball is "lost" if it _____.

Define briefly:

41. Honor:
42. Dog Leg:
43. Holing Out:
44. Approach Shot:
45. Face:
46. Stymie:
47. Number 9 Iron:
48. "Topped Ball":
49. Handicap:
50. Flag:

GYMNASTICS QUIZ

Circle T or F:

- T F 1. When standing with feet together, tightening the hip muscles tends to correct the position of the legs, abdomen, and lower back.
- T F 2. The functioning of the internal organs is rarely affected by exercise.
- T F 3. As muscular strength increases so does endurance.
- T F 4. Aids in walking are the forward movement of the body, low arm swing, ankle action, and push off from the rear foot.
- T F 5. A muscle increases in size, and therefore increases in strength, as it is put to use.
- T F 6. Weakness of muscles is due to stiff joints.
- T F 7. There is no need to keep up exercise after a person is in good physical condition.
- T F 8. The heart of a trained performer relaxes more completely than that of the untrained. This enables more blood to flow through the heart.
- T F 9. A person who has developed good strength will not need to call upon all muscles in an activity but may keep some in reserve.
- T F 10. A normal heart may be easily strained through vigorous activity.
- T F 11. Joint restriction or limited range of movement is rarely a handicap in sports.
- T F 12. The blood is aided in returning to the heart through movement and changing of the body position.
- T F 13. A muscle's strength is in proportion to the area of its cross section.
- T F 14. It is easier and takes less energy to maintain one's flexibility, strength, agility, and good carriage than it was to develop them in the first place.
- T F 15. Strong abdominal muscles tend to make a person slump forward.
- T F 16. Walking is so natural an activity, people perform it well.
- T F 17. Muscle soreness can best be relieved by rest.
- T F 18. Women can become muscle bound as their strength increases.
- T F 19. One should experience a variety of movements in developing a good body.
- T F 20. If a person has a flexible, strong, and agile body the foundation is made for pursuing activities throughout life.
- T F 21. Middle-aged and older people should give up exercises and concentrate on golf.
- T F 22. The back should be arched as much as possible in doing gymnastics and stunts.
- T F 23. Abdominal curls may be considered an excellent exercise for back flexibility and strength.
- T F 24. Very few sports give all round development.
- T F 25. The criteria for judging progress in gymnastics is better carriage, a feeling of well-being, more efficient use of the body, and increased interest in activities.

STUNTS AND TUMBLING QUIZ

In front of each stunt, place the letter of the best value attributed to that stunt:

- | | |
|---------------------------|--|
| ____1. Headstand | a) flexibility b) strength c) balance d) safety |
| ____2. Forward Roll | a) agility b) back flexibility c) rhythm
d) arm strength |
| ____3. Wicket Walk | a) leg strength b) leg and hip flexibility
c) back strength d) coordination |
| ____4. Turk Sit and Stand | a) abdominal strength b) leg strength
c) agility d) balance |
| ____5. Through the Stick | a) courage b) agility c) abdominal strength
d) suppleness |

Define:

Pyramid:

Spotting:

Locomotor stunt:

Cartwheel:

Center of gravity:

Base:

Dive:

Couple stunt:

Group stunt:

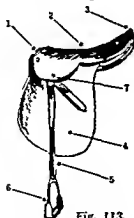
Mount:

RIDING QUIZ

PARTS OF HORSE AND TACK

1. What piece of tack goes on the horse's back first?
2. Where is it placed?
3. What is put on next?
4. Why must the saddle pad be pulled well up into the pommel?
5. How do you tell whether the girth is tight enough?
6. What are you able to do when the girth is adjusted properly?
7. How should a snaffle bit fit?
8. How should a pelham bit fit?
9. What general thing should be true of all tack when it is on the horse?
10. What is the last thing to do before mounting?
11. What parts of the saddle are detached before putting it away?
12. Why must stirrups be run up upon dismounting?

13. Name the numbered parts of this saddle:



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Fig. 113. Saddle.

14. Identify the numbered parts of this horse:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____

17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____

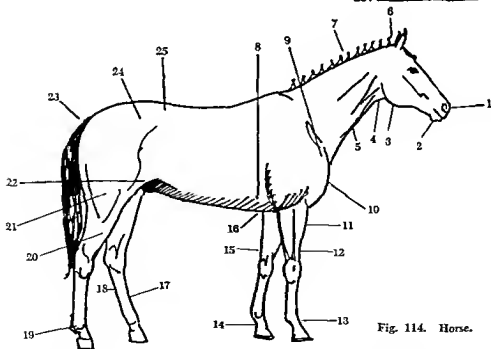


Fig. 114. Horse.

Name _____ Section _____ Date _____

RIDING QUIZ (Continued)

15. Name and describe four types of bits:

a)

b)

c)

d)

RIDING

16. From which side do you mount and dismount? _____

17. Where do you face when mounting? _____

18. What is held in the left hand? _____

19. How does your stirrup leather hang when you are seated correctly?

20. How are your hands held? _____

21. Where do you look when riding? _____

22. What three things do you use to turn your horse?

23. How do you stop your horse?

24. Name two things you must do before you begin to trot.

25. What is your position at the canter?

26. How do you keep from bouncing at the canter?

27. What is collection?

28. What do you do with your legs when riding bareback?

29. What is a punishment to a horse?

30. What is a reward?

STABLE MANAGEMENT

31. How much water should a horse have? _____
32. When should he not be allowed to drink? _____
33. What knot should be used to tie a horse in his stall? _____
34. How high should a horse be tied? _____
35. How long should the rope be? _____
36. Name four grooming tools. _____
37. How can you tell if a horse is clean?

38. How can you tell when a horse has a stone in his foot?

39. How often is a horse shod? _____
40. What materials can be used to bed a horse?

41. What should stalls be made of?

HISTORY AND DEVELOPMENT

42. Name five breeds of horses developed in America.

43. What are the three gaits of a horse? _____
44. What is a hunter?

45. What is a hack?

46. To what kind of horse does every breed today trace itself? _____
47. What two artificial gaits does a five gaited horse have?

48. What breed is noted for the running walk? _____
49. What is a pony?

50. Name three breeds of ponies.

SOCCER QUIZ

- ____1. Which of the following is a defensive tactic?
- a) Dribbling
 - b) Passing
 - c) Straight tackle
 - d) Punting
- ____2. Which player marks the Red right inner?
- a) Blue right fullback
 - b) Blue left fullback
 - c) Blue left halfback
 - d) Red left halfback
- ____3. What is the decision when the fullback makes a foul inside the penalty area?
- a) Roll-in
 - b) Penalty kick
 - c) Kick-in
 - d) Free kick
- ____4. What is the decision when a player without the ball is offside as she nears the penalty area?
- a) Defense kick
 - b) Legal play
 - c) Free kick
 - d) Kick-in
- ____5. The corner kick is usually taken by the:
- a) Right or left halfback
 - b) Inner
 - c) Wing
 - d) Right or left fullback

Circle T or F:

- T F 1. A soccer goalkeeper may pick up the ball, take one bounce, punt, dropkick, and throw the ball.
- T F 2. Unlike hockey, soccer is played in four quarters of eight minutes each.
- T F 3. A field goal may be scored from any spot within the field by any player who is on-side.
- T F 4. A player may cross her arms over her chest for protection, but fouls if she moves them out from her body against the ball.
- T F 5. Players' names and positions in soccer are the same as in hockey and speedball.
- T F 6. On a free kick, the ball is playable by another player as soon as the kicker touches the ball.

- T F 7. A player should be penalized if she takes more than two steps prior to taking a free kick.
- T F 8. A forward shall be called offsides if there are only three defense players between her and the goal.
- T F 9. A team may start play with ten players if the eleventh player arrives before the end of the first quarter.
- T F 10. Only the player receiving the roll-in shall be able to play it.

SOFTBALL QUIZ

Check below all the phrases which invariably make a true statement when combined with the first part of the question.

1. A baserunner may advance 1 base without liability of being put out:
 - ☐ a) on an overthrow of 1st.
 - ☐ b) on a balk toward the batter by the pitcher.
 - ☐ c) on a passed ball.
 - ☐ d) If forced to advance when a batter becomes a baserunner after 4 balls.
 - ☐ e) if forced to advance when the batter becomes a baserunner after a fair hit.
2. A baserunner shall be called out if:
 - ☐ a) she is hit by a batted ball before a fielder touches the ball.
 - ☐ b) at any time she runs more than 3 feet outside the baseline to avoid being tagged out.
 - ☐ c) she turns to the left after overrunning 1st base.
 - ☐ d) while play is being made on runner on 3rd, the coach at 3rd assists runner by pushing her back on the base.
 - ☐ e) at any time the ball is held on home plate before she reaches that base from 3rd.
3. A batter shall take 1st base if
 - ☐ a) hit by a pitched ball without trying to avoid it.
 - ☐ b) the umpire calls 4 balls.
 - ☐ c) the pitcher delivers an illegal pitch.
 - ☐ d) the catcher interferes with her.
 - ☐ e) she swings at a pitched ball and it strikes her before touching the ground.
4. When her team is playing in the field, a fielder may:
 - ☐ a) have the right of way in fielding a ball.
 - ☐ b) put a runner out by touching the base with the ball on a forced run.
 - ☐ c) stand on the baseline in front of an oncoming runner when she does not have the ball.
 - ☐ d) cover any part of the field regardless of her position.
 - ☐ e) put a batter out by catching a fly ball even though she juggles it.
5. Final decision rests with the plate umpire in the following:
 - ☐ a) safe or out at 1st base.
 - ☐ b) infield fly.
 - ☐ c) batted ball, fair or foul.
 - ☐ d) illegal pitch.
 - ☐ e) with runners on 1st and 3rd bases, the runner leaves 3rd base before the pitch.

Circle T or F:

- T F 1. When preparing to throw a softball, a player should hold the ball between the thumb and the first two fingers of the throwing hand.
- T F 2. Most ground balls are missed because the ball goes over the fielder's glove.
- T F 3. A regulation softball games consists of 9 innings.
- T F 4. Home plate, first, and third bases are entirely within the playing diamond.
- T F 5. Both feet must be in contact with the pitcher's plate when the pitch is started.
- T F 6. A bunted pop fly comes under the infield fly rule and the batter is automatically out.
- T F 7. On an attempted sacrifice bunt, the baserunner waits until the ball is on the ground before starting toward the next base.
- T F 8. When the ball is in play and the baserunner is caught off base, the only way she can be put out is to be tagged with the ball.
- T F 9. A batted ball which hits the outside corner of first base without being touched and then comes to rest in foul territory is ruled a foul ball.
- T F 10. If a player's position in the field is shifted, her place in the batting order must also be changed.
- T F 11. It is required that girls and women wear masks and chest protectors when playing as catchers.
- T F 12. Appeals must be made either at or before the completion of the play. The decision of the umpire must not be made until the play is completed.
- T F 13. A baserunner may run on a foul tip.
- T F 14. Bases are full and there are no outs. The batter hits a fly which is dropped by the pitcher. The batter is out.
- T F 15. A batter is out if a foul tip occurs on her third strike.

SPEEDBALL QUIZ

Select the best answer and place the letter in the space to the left:

- _____ 1. A tie ball occurs when
 - a) two players of the same team catch the ball at the same time.
 - b) opposing players pull or spin each other by jerking the ball.
 - c) opposing players place one or both hands firmly on the ball at the same time.
 - d) one player snatches the ball out of her opponent's hands.
- _____ 2. The field includes
 - a) a penalty-kick mark.
 - b) a foul line.
 - c) a corner kick mark.
 - d) an alley on each side of the field.
- _____ 3. Speedball was invented by
 - a) James Naismith.
 - b) Elmer Mitchell.
 - c) Constance Applebee.
 - d) William Morgan.
- _____ 4. Playing time is the same as in
 - a) hockey.
 - b) soccer.
 - c) volleyball.
 - d) softball.
- _____ 5. The score of a field goal is
 - a) 1 point.
 - b) 2 points.
 - c) 3 points.
 - d) 4 points.
- _____ 6. A ball can become an aerial ball if
 - a) headed into the air.
 - b) shoulder-blocked from a bounce.
 - c) a bouncing ball is kicked.
 - d) it rolls up the leg as the foot remains on the ground.
- _____ 7. A field ball may be scored from a
 - a) ground ball that is kicked or given impetus with the body.
 - b) thrown ball.
 - c) throw-in.
 - d) roll-in.
- _____ 8. The purpose of trapping is to
 - a) redirect the ball to a teammate.

- b) stop the ball.
- c) dodge an opponent.
- d) place the ball for further play.

- ___ 9. The offside rule pertains to
- a) soccer and hockey but not to speedball.
 - b) the last period of the game.
 - c) the whole game if the captains agree.
 - d) speedball only if the player is gaining advantage by being in an offside position.
- ___ 10. The kick-up is faster if done with
- a) one foot on a stationary ball.
 - b) both feet.
 - c) a rolling ball.
 - d) both hands from the ground.
- ___ 11. On the kick-off, the ball, before another player may play it, must
- a) cross the restraining line.
 - b) travel the distance of its circumference.
 - c) be kicked in any direction.
 - d) be lifted to a teammate.
- ___ 12. If the ball is kicked out of bounds at the side of the field, it is put in play by a
- a) throw.
 - b) drop kick.
 - c) punt.
 - d) dribble with feet.
- ___ 13. The best type of passing is
- a) short, quick, thrown passes.
 - b) long passes.
 - c) long kicks.
 - d) a combination of long passes and long kicks.
- ___ 14. A foul should be called on a player who
- a) juggles the ball.
 - b) places a hand on the ball after securely being held by an opponent.
 - c) takes more than a two-step stop.
 - d) holds the ball three seconds on the field.
- ___ 15. A touchdown is scored if
- a) a forward pass falls short of the end line and lands in the end zone.
 - b) the ball is passed from the playing field to a teammate behind the end line.
 - c) a forward pass is thrown by a player standing in the penalty area.
 - d) the receiver of a forward pass catches the ball with one foot behind the end line and the other in the end zone.

SWIMMING QUIZ

Circle T or F:

- T F 1. It is safe for skilled swimmers to swim alone.
- T F 2. It is not advisable to breathe in through the nose in swimming.
- T F 3. The breath should be exhaled primarily through the mouth.
- T F 4. Bending the knees and extending the arms in the water over the head, may aid in levelling off in the back float.
- T F 5. In the back float the body should be horizontal.
- T F 6. It is harder to float in deep water than in shallow.
- T F 7. In standing from the back float the body should first assume a sitting position.
- T F 8. It is important to bring the head forward when standing from a back float.
- T F 9. The head should be out of water in the face float.
- T F 10. The arms should not assist when standing from a float.
- T F 11. When the arms recover in the elementary back stroke, they are brought up to the shoulder close to the sides of the body.
- T F 12. In the elementary back stroke the arms should start from a position above the head.
- T F 13. Both arms stroke together in the elementary back stroke.
- T F 14. In the recovery of the arm in the crawl the elbow should be higher than the wrist.
- T F 15. The breathing should always be done on the right side in the crawl stroke.
- T F 16. Both arms stroke together in the crawl stroke.
- T F 17. The knees should be straight in the crawl kick.
- T F 18. A scissor kick may be taken when the body is turned on the side to breathe, in the crawl stroke.
- T F 19. The head controls the dive.
- T F 20. In a good dive the body enters the water perpendicularly.
- T F 21. A good diver enters the water close to the board.
- T F 22. A minimum of three steps should be used in a running dive from the springboard.
- T F 23. There should be a jack at the hips in the running front dive.
- T F 24. The body should be arched in the back dive.
- T F 25. The frog kick is used in the side stroke.
- T F 26. The bottom leg kicks forward in the side stroke kick.
- T F 27. The legs may drift apart on the glide on the side stroke.
- T F 28. The side stroke kick is taken as the top arm strokes in the side stroke.
- T F 29. The stroke of the lower arm is the same for both the side and side overarm strokes.
- T F 30. The scissor kick may be used in treading.

SYNCHRONIZED SWIMMING QUIZ

Circle T or F:

- T F 1. The back somersault tuck finishes in a front layout position.
- T F 2. The body submerges completely in the submarine.
- T F 3. The shark is done in a side layout position.
- T F 4. The hips should not drop in ballet legs.
- T F 5. In the dolphin the back does not arch until the body is under the surface.
- T F 6. The kip is started with a front somersault tuck.
- T F 7. A back somersault cannot be done in a pike position.
- T F 8. The name synchronized swimming dates back to the 1934 Chicago World's Fair.
- T F 9. Strokes and stunts should not be combined in a routine.
- T F 10. The leg should extend back over the head in ballet legs.

Complete the following statements:

- 1. _____ is fundamental to most stunts.
- 2. The starting position for the dolphin is _____.
- 3. The kip is completed when _____.
- 4. The position of the body at the end of the front somersault should be _____.
- 5. The momentum in a flying porpoise comes from _____.
- 6. The porpoise is the same as _____.
- 7. _____ gave rhythmic swimming the name synchronized.
- 8. The position in which the body is rolled-up with the knees to the chest is called _____.
- 9. The combination of parts of two or more strokes is called _____.
- 10. Synchronized swimming was originally called rhythmic swimming or _____.

TENNIS QUIZ

Circle T or F:

- T F 1. If you direct the ball to your opponent's baseline you are placing her in a defensive position.
- T F 2. One should wait to move into position until the ball bounces on own side of the net.
- T F 3. It is considered unwise for partners to move to the net together.
- T F 4. The toss is an important part of the service.
- T F 5. It is good play to place serves near the center line in doubles.
- T F 6. It is considered poor sportsmanship to aim the ball at the opponent's feet.
- T F 7. Eighty percent of the errors in tennis may be due to taking the eyes away from the ball.
- T F 8. In the waiting position, the racket head points toward the ground.
- T F 9. The greater the backswing, the more power in the resulting stroke.
- T F 10. In the forehand stroke, one should try to hit the ball at waist height, directly in front of the left shoulder pointing toward net.
- T F 11. To rally means to hit the ball before it bounces.
- T F 12. The server should keep the score in informal matches.
- T F 13. When the service is delivered before the receiver is ready and she tries to return it but fails, she is entitled to have it replayed.
- T F 14. A set is complete at six games.
- T F 15. If the server has two points and the receiver has one, the score is 40-30.
- T F 16. A net ball constitutes a fault.
- T F 17. The term "advantage server" means the person serving is ahead in the number of games won in the set.
- T F 18. A match consists of the best two out of three sets for women.
- T F 19. If the ball touches the net and falls into the opponent's court during volleying at the net, a fault is called.
- T F 20. The order of service may be changed in doubles from game to game.
- T F 21. An underhand service is legal.
- T F 22. A player may catch the ball if it is obviously going out of bounds and claim the point.
- T F 23. The receiver may stand anywhere she chooses on her side of the net.
- T F 24. If the score is 15-15, the next service shall be taken in the right hand court.
- T F 25. The service court is larger for doubles than for singles.
- T F 26. One player serves the entire game.
- T F 27. At the beginning of a match the winner of the spin or toss has first choice of the court or of serving first.
- T F 28. The server loses the point if she foot faults on the first serve.
- T F 29. The terms "rough" and "smooth" refer to the type of leather used for the handle grip.
- T F 30. The most efficient form of doubles play is up and back.

Place the letter of the correct answer before the number:

- ____31. The term for making two errors in serving is a) lohs, b) strokes, c) deuce, d) double fault.
- ____32. Hitting the ball back and forth across the net is called a) rally, b) volley, c) advantage d) forehand.
- ____33. A tie score at 40-40 is called a) love, b) deuce, c) advantage, d) loh.
- ____34. If the serve touches the net then drops over into the proper area, it is called a) net ball, b) let, c) fault, d) advantage server.
- ____35. Returning the ball before it bounces during a rally is a) a fault, b) a lob, c) a volley, d) a let ball.
- ____36. Opponents should change sides of the court after a) each game, b) each set, c) after each even-numbered game, d) each odd-numbered game.
- ____37. A serve which the receiver is unable to touch is called a) smash, b) ace, c) lob, d) volley.
- ____38. If the server gains the first point after deuce, the score becomes a) advantage server, b) advantage receiver, c) double deuce, d) love.
- ____39. A ball which lands on a line is a) taken over, b) good, c) out, d) as core for each side.
- ____40. The alley is used for a) doubles service and play, b) singles service and play, c) singles service only, d) doubles play only.

VOLLEYBALL QUIZ

Circle T or F:

- T F 1. A ball which falls on the boundary line is considered out of bounds.
- T F 2. An assist on the serve is a legal play.
- T F 3. In serving it is best to hold the ball about shoulder high so you can be sure it will go over the net.
- T F 4. A player may not leave the court to play the ball.
- T F 5. If a player on the serving team hits the ball two times in a row, a side-out is called.
- T F 6. The serving order may not be changed for the second or third game in a match.
- T F 7. A second trial of service is allowed on a let serve.
- T F 8. Players may interchange positions when the ball is in play.
- T F 9. There is no limit to the number of people on a team that may hit the ball before it goes over the net.
- T F 10. Only the serving team may make points.
- T F 11. The best way for the second-row players to return the ball over the net is to pass it to their own net players, who then hit it over.
- T F 12. The captain may ask for time out whenever the ball is dead.
- T F 13. A side out is called when the serving team fouls.
- T F 14. It is illegal to throw the ball.
- T F 15. When the ball is served each player must be in her own area.

Complete the following statements.

- 1. The serving team rotates in a _____ direction.
- 2. When a girl on the serving team catches the ball for a moment before she plays it, the referee calls "_____."
- 3. A substitute must report to the _____ and _____ before she enters the game.
- 4. A ball that, while in play, strikes some over-head equipment is considered _____.
- 5. "_____" is called, when a net player of the serving team steps over the center line.
- 6. The official rules for women's volleyball are compiled by the _____.
- 7. The smash or spike should only be executed by the _____ players.
- 8. A _____ is called when the ball touches a girl's shoulder while she is playing it.
- 9. A player has _____ try (tries) to complete a successful serve.
- 10. An official team is composed of _____ players.